



**LLOYD INSTITUTE  
OF ENGINEERING  
& TECHNOLOGY**



Departmental Technical Magazine

# **STRUCTURA**

**Volume -1, Issue: 01**

**Department of Civil Engineering**

**Session - 2023-24**

# About



LIET, Lloyd Institute of Engineering & Technology has become a place where dreams are indeed transformed into reality. The institute is affiliated to Dr. A.P.J. Abdul Kalam Technical University (Formerly UPTU) and recognized by the A. I. C. T. E. (Min of HRD), New Delhi, and

Affiliated to



Lucknow

Approved by



New Delhi



## VISION

"To emerge as an Institute of academic excellence by empowering young minds through problem-solving skills, knowledge & ethical values and transforming them into professionals of global competence".



## MISSION

M1: To equip the students with state-of-the-art technological advancement and skills.

M2: To create a conducive environment for teaching and learning through continuous engagement with industry for corporate understanding and Professionalism.

M3: To focus on holistic development of students through enhanced learning along with moral and ethical value system.



# About Department

One of the primary engineering departments of the Lloyd Institute of Engineering and Technology (LIET) Greater Noida, the Department of Civil Engineering offers a 4 years B.Tech. Program. B.Tech. course is approved by AICTE, Ministry of HRD, New Delhi (India) and affiliated to Dr.A.P.J.Abdul Kalam Technical University, Lucknow, and Uttar Pradesh. The Civil Engineering department was established in 2009 and since its inception the department has been continuously building a strong theoretical and practical foundation of Civil Engineering to the students. Students are provided here with deep knowledge in the field of structural engineering, geotechnical engineering, transportation and bridge engineering, water resources and hydraulics, surveying, structural design and drawing, environmental engineering, construction technology and management.

The Institute promotes bridging the gap between academia and industry and ensures that its students are extensively trained through active industrial collaborations. The department has an innovative approach to education that integrates professional industry experience into the academic curriculum. We provide a program that balances classroom theory with periods of practical, hands-on experience prior to graduation.



To produce technocrats of universal standards in civil engineering who are academically and professionally strong with the capability to innovate for modern requirements, serve society and face global challenges.



1. To educate the students of civil engineering through innovative technologies and to cultivate a creative and research environment among the students.
2. To create professionals who can design and develop affordable infrastructure for rural and urban growth
3. To make the students conscious of the environment and trained in developing sustainable infrastructure and renewable sources of energy.





## ***Program Educational Objectives (PEOs)***

1. To establish a strong base in the fundamental principles of mathematics, science, and engineering for the learner's comprehensive preparation.
2. To equip the learner with the proficiency to adeptly employ contemporary tools for the purpose of addressing practical challenges in real-world scenarios.
3. To inspire and drive learners towards mastering the skill of self-directed learning.
4. To cultivate ethical professionals with strong leadership skills and a commitment to social responsibility.

## ***Program Specific Outcomes (PSOs)***

1. Apply the fundamentals of mathematics, science and engineering knowledge to understand, analyze and develop computer based solutions for engineering applications.
2. Apply appropriate techniques and modern engineering hardware and software tools to design cost effective computation tools to solve contemporary challenges for social applications.
3. To use domain expertise for research, higher studies, entrepreneurship, and innovative solutions, guided by ethical leadership and teamwork.

## President

# Mr. Manohar Thairani



It gives me immense pride and satisfaction to witness the remarkable growth and achievements of the CSE & Allied Branches at LIET. In an age where technology drives progress and innovation shapes the future, Computer Science stands at the core of global transformation.

At LIET, we believe that education must evolve alongside technology. Our vision is to create a dynamic academic ecosystem that nurtures innovation, leadership, ethical values, and a spirit of entrepreneurship. The CSE & Allied Branches are playing a pivotal role in realizing this vision by producing future-ready professionals equipped with technical excellence and strong moral foundations.

This magazine is a reflection of the intellectual energy, creativity, research excellence, and innovative mindset of our students and faculty members. It highlights their accomplishments and reinforces our commitment to academic distinction and continuous improvement.

This magazine is a reflection of the intellectual energy, creativity, research excellence, and innovative mindset of our students and faculty members. It highlights their accomplishments and reinforces our commitment to academic distinction and continuous improvement.

I extend my heartfelt congratulations to the entire CSE & Allied Branches team for their dedication and commendable efforts in bringing out this publication. I encourage all students to think big, stay curious, and lead the technological revolution with confidence and integrity.

Together, let us build a future driven by knowledge, innovation, and excellence.

## Senior Director

# Prof. (Dr.) Rajeev Agrawal



In the era of exponential technological evolution, I extend a warm welcome to all students, faculty members, and readers of the CSE Magazine at LIET. Today, technology is not merely advancing — it is transforming the way we live, learn, and innovate. At LIET, we recognize the importance of staying ahead in this ever-evolving digital landscape.

Our commitment goes beyond conventional education. We strive to nurture future-ready engineers equipped with cutting-edge technical expertise, innovative thinking, and the adaptability required to excel in a fast-paced global environment. The Department of Computer Science & Engineering plays a pivotal role in driving this vision by fostering creativity, research, and industry-oriented learning.

This magazine reflects the intellectual vibrancy, technical achievements, research initiatives, and creative pursuits of our CSE students and faculty. It stands as a testament to their dedication and the institution's progressive academic environment.

I encourage all students to embrace innovation, think beyond boundaries, and continuously upgrade their skills. The future belongs to those who are prepared to evolve with technology and lead with vision.

Embrace the evolution. Shape your future.

## Dean (R & D) – LIET

# Dr. S.P. Dwivedi



At Lloyd Institute of Engineering and Technology, the Department of Computer Science & Engineering is emerging as a dynamic center of technological excellence and research-driven innovation. As Dean (R&D), I am proud of the enthusiasm and dedication shown by our CSE students and faculty in rapidly evolving fields such as Artificial Intelligence, Machine Learning, Data Science, Cyber Security, Cloud Computing, and the Internet of Things. Our focus is not only on academic achievement but also on nurturing analytical thinking, creativity, and a strong problem-solving mindset that prepares students to lead in the digital era.

The Research & Development ecosystem within the CSE branch is designed to encourage curiosity, experimentation, and collaboration. Through funded research projects, industry-driven problem statements, hackathons, coding competitions, and interdisciplinary innovation initiatives, students are provided with hands-on exposure that bridges the gap between academic learning and industry expectations. We actively promote research publications, patent filing, startup incubation, and participation in national and international technical competitions to strengthen our students' global outlook.

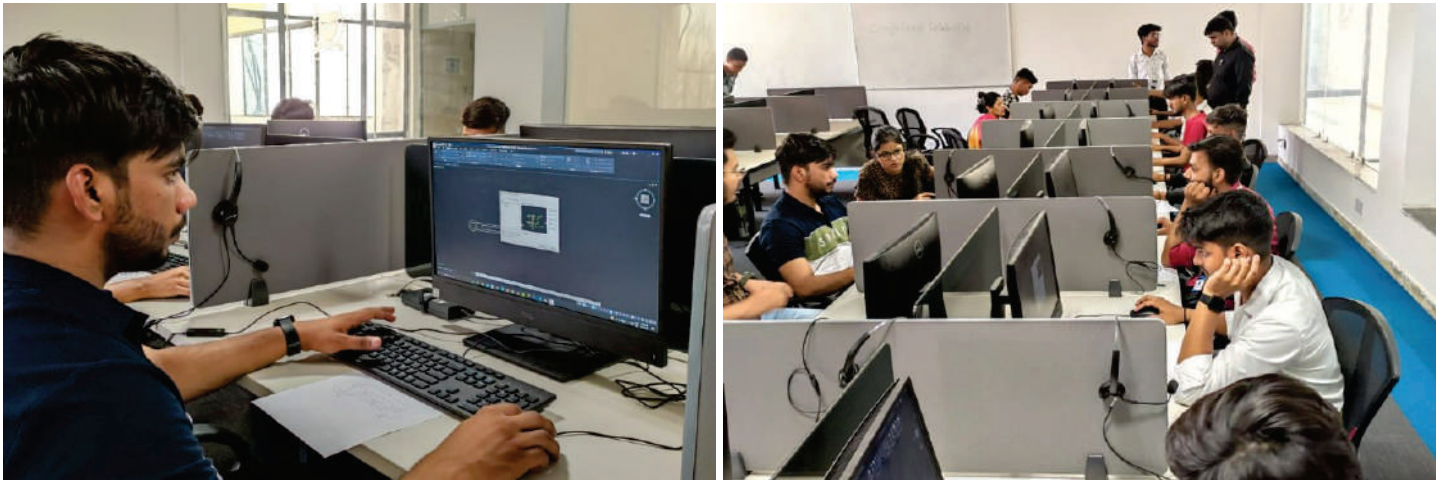
Collaboration remains the cornerstone of our growth. We continuously seek partnerships with technology companies, research organizations, and academic institutions to provide our students with advanced laboratories, expert mentorship, internships, and real-time project opportunities. Our aim is to build a dynamic research culture where innovation thrives and ideas transform into impactful technological solutions.

I firmly believe that the future belongs to those who innovate. Through strong academic foundations, ethical values, and a spirit of continuous learning, the CSE branch at LIET is committed to shaping future-ready professionals who will contribute significantly to society, industry, and the nation. Together, let us continue to explore, innovate, and excel in the ever-evolving world of computing and technology.



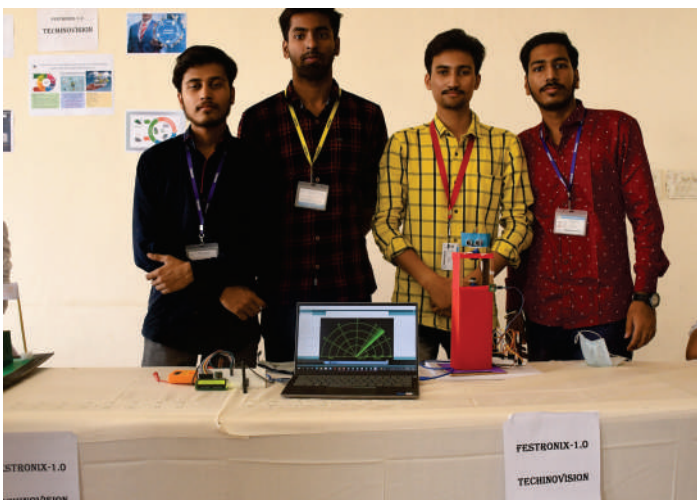
# Precision in Design: AutoCAD Drafting Competition

The Civil Engineering branch organized the AutoCAD Drafting Competition to promote technical excellence and creativity among students. The event focused on developing precision in digital drafting, where participants prepared detailed engineering drawings using proper dimensions, scaling, and standard practices. It provided a valuable platform for students to enhance their practical skills, improve accuracy, and gain confidence in design work. The competition reflected the importance of precise drafting in modern civil engineering and encouraged innovation and professional growth.



# Draft & Design: Civil Challenge Competition

The Civil Engineering branch organized the “Draft & Design: Civil Challenge Competition” to encourage creativity, technical skills, and practical application of engineering concepts. The competition provided a platform for students to showcase their abilities in planning, drafting, and designing innovative civil engineering solutions. Participants worked on tasks that involved preparing detailed drawings and design layouts while focusing on accuracy, functionality, and adherence to engineering standards. The event enhanced problem-solving skills, precision, and teamwork among students.



# Exploring Civil Engineering: Levelling, Mapping & Industrial Exposure

The Civil Engineering branch organized a comprehensive learning activity combining levelling, mapping, and an industrial visit to bridge the gap between theory and practical application. Students gained hands-on experience in field surveying using levelling instruments, enhancing their understanding of measurement techniques and data accuracy. The mapping exercise helped students develop skills in interpreting and representing field data effectively. The industrial visit further provided real-world exposure to construction practices, site operations, and modern engineering techniques.



# Festronix - 1.0

## Theme: Circular Economy

Festronix 1.0 was organized as a dynamic technical and cultural fest centered around the theme of Circular Economy, promoting sustainability and responsible resource management. The event encouraged students to rethink traditional practices by focusing on reuse, recycling, and reducing waste through innovative ideas and solutions. Various competitions, workshops, and exhibitions were conducted, where participants showcased projects aligned with eco-friendly technologies and sustainable development. The fest created awareness about minimizing environmental impact while maximizing efficiency in resource utilization.

The fest also provided a collaborative platform for students, faculty, and industry experts to exchange ideas and explore practical approaches toward a greener future. Interactive sessions, expert talks, and live demonstrations further enriched participants' understanding of sustainable innovations. Overall, Festronix 1.0 successfully inspired a sense of environmental responsibility while nurturing creativity, technical skills, and a forward-thinking mindset among students.



**LLOYD INSTITUTE OF ENGINEERING AND TECHNOLOGY**  
**LLOYD TECHFEST: 2022**  
**FESTRONIX 1.0**  
**BRIDGEHOME**

QR Code  
For Registration

**WIN Exciting Prizes**

**Entry Fees 100/- Team**

**Faculty Coordinator**  
Ms. Surabhi Gaidhani

**Venue:**  
LIET, Plot No.3,  
Knowledge Park-2,  
Greater Noida

**Student Coordinator**  
Amit Pandey (7800562608)

The poster features a dark blue background with a starry sky. On the right, a stylized bridge with a red car driving on it extends into the distance. A yellow starburst graphic contains the text 'WIN Exciting Prizes'. A green box contains the text 'Entry Fees 100/- Team'. The Lloyd Institute of Engineering and Technology logo is in the top left corner.





# Webinar on Building the Future: Innovations in Concrete Technology

The Civil Engineering department organized an insightful webinar on “Building the Future: Innovations in Concrete Technology” to explore the latest advancements in construction materials. The session focused on modern developments such as high-performance concrete, self-healing concrete, and eco-friendly alternatives that enhance durability and sustainability. Industry experts shared practical knowledge on emerging trends, material efficiency, and innovative construction techniques shaping the future of infrastructure. The webinar provided students with valuable exposure to real-world applications and recent technological progress in the field.



# Future of Smart Infrastructure in India

Smart infrastructure is transforming the way cities and communities function in India. With rapid urbanization and population growth, the need for efficient, sustainable, and technology-driven infrastructure is becoming more important than ever. Smart infrastructure integrates advanced technologies like sensors, data analytics, and automation to improve the performance of urban systems.

In India, initiatives like smart cities, digital transportation systems, and intelligent water and energy management are shaping the future. These developments aim to reduce traffic congestion, optimize energy usage, improve waste management, and enhance the overall quality of life for citizens.

The use of technologies such as Internet of Things (IoT), artificial intelligence, and real-time monitoring systems allows better decision-making and efficient resource utilization. For example, smart traffic signals, automated street lighting, and smart grids are already being implemented in many cities.

However, challenges such as high initial costs, data security, and the need for skilled professionals must be addressed. Proper planning and government support are essential for successful implementation.

Overall, the future of smart infrastructure in India is promising, offering sustainable growth, improved urban living, and better management of resources, making cities more resilient and future-ready.



**ARNAV PANDEY**  
B.Tech CE 2nd Year

# Role of Civil Engineers in Wastewater Treatment

Civil engineers play a crucial role in wastewater treatment by designing, constructing, and maintaining systems that safely manage and treat used water. Their work helps protect public health and the environment by preventing water pollution.

They are responsible for planning sewage systems, treatment plants, and drainage networks that efficiently collect and transport wastewater. Civil engineers also design treatment processes to remove harmful substances, ensuring that the treated water can be safely discharged or reused.

In addition, they focus on sustainable solutions such as water recycling, sludge management, and energy-efficient treatment methods. Their expertise helps in conserving water resources and reducing environmental impact.

Civil engineers also monitor system performance, ensure compliance with environmental regulations, and upgrade existing infrastructure when needed. Overall, their role is essential in maintaining clean water systems and supporting sustainable urban development.

**ROHIT KUMAR**  
B.Tech CE 2nd Year



# Importance of Surveying in Civil Engineering

Surveying is a fundamental aspect of civil engineering that involves measuring and mapping land to determine the exact position of points, distances, and elevations. It provides the basic data required for planning, designing, and executing construction projects. Accurate surveying helps engineers understand site conditions, boundaries, and topography, ensuring proper layout and alignment of structures such as roads, bridges, and buildings. It minimizes errors in construction and helps in efficient use of land and resources.

Surveying also plays a vital role in project planning, helping in decision-making and cost estimation. It ensures that construction is carried out at the correct location and level, maintaining safety and quality standards.

With the use of modern tools like Total Station, GPS, and drones, surveying has become faster and more precise. Overall, it is essential for the successful completion of any civil engineering project.

**PRATEEK KUMAR GOUR**

B.Tech CE 2nd Year



# EDITORIAL BOARD

Editor-in-Chief

**Dr. J. M. Giri**

HoD (CE Department)



**Editor**

**Ms. Surabhi Gaidhani**

Assistant Professor, CE



**Mr. Ravi Kalra**

IIC Convener, LIET



**Sub-Editor**

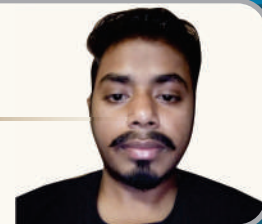
**Arnav Pandey**

2201530000003



**Rohit Kumar**

201530000005



**Content Editor**

**Prateek Kumar Gour**

B.Tech CE 3<sup>rd</sup> Semester

**Himanshu Singh**

B.Tech CSE 5<sup>th</sup> Semester

**Arnav Pandey**

B.Tech CE 3<sup>rd</sup> Semester

**Rohit Kumar**

B.Tech CE 3<sup>rd</sup> Semester