Department of Civil Engineering

April-June-2024

ECHELON INSTITUTE OF TECHNOLOGY

NEWS LETTER April-June 2024

DEPARTMENT OF CIVIL ENGINEERING

ECHELON INSTITUTE OF TECHNOLOGY, FARIDABAD

INSTITUTE VISION AND MISSION

Vision

The institute is committed to fulfilling its vision of- "Technical and Management leaders engaged in the evolution of life, being at the frontiers of the continuous technological and administrative breakthroughs, inspired by ongoing exploration of self, society, and nature through self-reflective consciousness by building a culture of inspiration, exploration and growth."

Mission

M-1 Having a culture of inspiration, exploration and invention through effective, experiential teaching-learning giving rise to ever evolving knowledge and wisdom.

M-2 To have self-inspired students ever engaged in continually working upon and sharpening and deepening computational, creative, innovative and leadership consciousness.

M-3 Having students established in self- reflective consciousness, committed to personal, social & human integrity and engaged in deep inquiry and conversation, giving rise to shared, inter-subjective human values and consciousness.

ECHELON INSTITUTE OF TECHNOLOGY, FARIDABAD

DEPARTMENT OF CIVIL ENGINEERING VISION AND MISSION

Vision

"To **Create** quality Civil Engineering Professionals having ethical and moral values who can serve the society as technocrats, innovators, academicians & entrepreneur, able to uplift the quality of life by providing the sustainable quality environment to the society through the creation of excellent infrastructure and public health facilities."

Mission

i. To maintain high quality labs to ensure sufficient technological exposure to the students in order to create tech-savvy professionals.

ii. To impart adequate softwares exposure required for planning and designing of infrastructures.

iii. To ensure effective counseling and career guidance facilities to the students to help them achieve their goals.

iv. To motivate the students to participate in the national level examination such as GATE/ CAT/ Engineering Services etc.

v. To have well qualified and competent faculty members in the department who are in position to impart quality technical education.

vi. To encourage faculty and staff members to participate in seminars and workshops for their awareness of state-of-the-art technology.

vii. To encourage the faculty and staff members to pursue higher education and research.

FROM THE DESK OF EDITIOR IN CHIEF

It gives me immense pleasure to present the latest trends in Civil Engineering. The period has been packed with variety of activities in the hectic and tight academic schedule. This edition of the newsletter summarizes the achievements and highlights of the semester. I would like to take this opportunity to present the readers with the glimpses of the week and other activities of the Civil Engineering Department. In this quest, I would like to keep you up –to-date with the happenings of the department. And hence, present you with this half yearly newsletter. You can know the details as you go through the newsletter. Every faculty made an effort to avoid the boredom of class room lectures and ample opportunities were provided for personality development of the students and enhancement of their skills as per their choice/ area of interest through hobby clubs and industrial visits. This approach helps maintaining a very healthy and conducive atmosphere of learning, keeping the students in an excited state eager to grasp knowledge at all times. The department is scaling new heights with such positive approach.

Mr. Mukul Attri
Assistant Professor
Department of Civil Engineering
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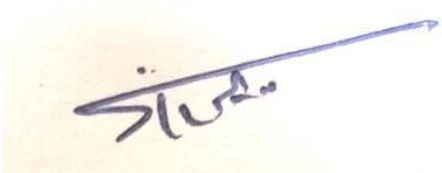
ENDEAVOUR BY HOD

The Aim of our department is to provide quality education. The process of learning is extremely important in life. What you learn, how you learn and where you learn play a crucial role in developing ones intellectual capability, besides career. I am proud to see that the students and faculty of our department have put in appreciable effort into creating this newsletter. This newsletter highlights the academic and non-academic activities of both faculty and students of the Department of Civil Engineering.

I congratulate the editorial team for their brilliant and original efforts. I wish all the students and faculty a great academic career



Dr. Sindhu Kumar
HOD Civil Engineering
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ABOUT THE DEPARTMENT

Civil Engineering is the application of physical and scientific principles, and its history is intricately linked to advances in understanding of physics and mathematics throughout history. Because civil engineering is a wide ranging profession, including several separate specialized sub-disciplines, its history is linked to knowledge of structures, materials science, geography, geology, soils, hydrology, environment, and mechanic sand other fields.

The course cover basic sciences, Mathematics, Engineering graphics, computing techniques along with the fundamental Engineering principles of construction materials, Building Drawing and Laboratory classes interesting of materials help to understand Civil Engineering in a practical way. Software packages like AutoCAD, STAAD Pro allows our students to expand their skills and provide an adequate platform to perform analysis, design and drawing for a wide range of civil Engineering buildings and other heavy structures viz. Roads, bridges, flyovers, dams, etc.

Every semester students will be taken for Industrial Visits to various Construction sites and water Treatment Plant, Atomic Power stations, Dams and places of interest to impart Practical Knowledge. In addition, the students have to undergo practical Training for 2- 3 weeks in any Construction industry to gain practical experience and technical skills. The students are also encouraged to give seminars on current areas of research. To acquire high degree of engineering skills and to translate brilliant ideas into a working reality.

Upcoming Government Infrastructure Projects in 2024

1. Navi Mumbai International Airport

As of February 2024, the construction progress of the airport project stands at approximately 60%, with officials expressing confidence in meeting the scheduled first commercial takeoff in March 2025, notwithstanding some concerns about potential delays. Trial flights are anticipated to commence in October 2024, and the construction is slated for completion by December 2024.

Key developments include the runway being 70% complete, ongoing construction of the terminal, and an overall project alignment with a phased opening strategy.

The planned phases for the airport project reveal a strategic approach. The first phase, set to accommodate 20 million passengers annually, is anticipated to become operational in early 2025. Subsequent phases are designed to significantly expand the airport's capacity, aiming to handle up to 60 million passengers by the year 2032. This phased development underscores a meticulous plan to ensure the effective and sustainable growth of the airport, catering to the increasing demands of air travel.

2. DMIC – Delhi Mumbai Industrial Corridor

The Delhi-Mumbai Industrial Corridor (DMIC) is a mega infrastructure project that aims to create smart, sustainable industrial cities along the Western Dedicated Freight Corridor (DFC) between Delhi and Mumbai. The project covers six states: Uttar Pradesh, Haryana, Rajasthan, Madhya Pradesh, Gujarat, and Maharashtra. The project is expected to generate employment opportunities, economic growth, and socio-economic development in the region.

According to the latest updates, four greenfield industrial smart cities are being developed under the DMIC in the states of Maharashtra, Gujarat, Madhya Pradesh, and Uttar Pradesh. Major trunk infrastructure works have already been completed there, and land allotment for investors has been initiated. Some companies have started production in these areas. The project also involves the development of six airports, two ports, two power plants, 23 manufacturing centres and a six-lane expressway

The project also involves the development of other infrastructure components such as airports, ports, power plants, manufacturing centres, and expressways. The DMIC project is expected to be completed by 2024-25.

3. Dholera Smart City

Dholera Smart City, a visionary greenfield initiative in Gujarat, India, aims to create a sustainable and economically dynamic urban centre. As of 2024:

- Current Progress:

  In focus is Phase 1 development, concentrating on essential infrastructure like roads, drainage, water supply, and electricity networks. Private developers are actively involved in the construction of residential and commercial complexes.

- Status Update:

  As of February 2024, around 30% of Phase 1 infrastructure is completed, and residential plots and villas are available for purchase. The targeted completion for Phase 1 is set for 2024-2025, with subsequent phases planned for future development.

- Key Attributes:

  Dholera prioritises sustainability, aiming to be a carbon-neutral city with renewable energy integration, smart waste management, and ample green spaces. The city's design encompasses a live-work-play environment, featuring a mix of residential, commercial, and industrial zones, along with educational and healthcare facilities. Smart city technologies will be implemented for efficient governance, infrastructure management, and citizen services.

4. Jewar International Airport (Noida Airport)

The Noida International Airport, also known as Jewar International Airport, is set to become the second international airport in the Delhi-National Capital Region. With the foundation stone laid in 2021, the airport aims to address the growing demand for air travel in the region. Located southeast of central Delhi, Gurgaon, and Noida, the airport prioritises connectivity, being connected to the Delhi Metro system and situated near the Yamuna Expressway, ensuring a 90-minute journey from central Delhi.

The first phase, expected to open in late November 2024, will feature two runways and a terminal catering to 12 million travellers, with future phases projecting a capacity for 70 million passengers and five runways. The strategic planning of the airport, along with its focus on seamless inter-terminal connectivity, suggests it will be well-equipped to handle increasing traffic and provide enhanced travel convenience for the wider National Capital Region.

Authorities are actively working to establish seamless connectivity between the upcoming Noida International Airport in the Jewar area and Delhi's Indira Gandhi International Airport (IGI). The Noida airport is set to have direct metro, high-speed rapid rail, and road connectivity. With an anticipated annual passenger capacity of 65 lakh by 2024-25 and a projected seven crore passengers by 2042-43, the Uttar Pradesh government emphasises the need for efficient rapid rail and metro options.

A trial landing on the runway is proposed for February 2024 to expedite the airport's development, including runway construction and lighting installations. The government is also considering a new 98 km rail line to enhance connectivity. Directives have been issued for critical infrastructure development and security measures, underscoring the commitment to meeting the November 24, 2024 deadline for the first phase of Jewar International Airport.

Conclusion

India is the second largest industry as it employs more than 35 million people and contributes to about 10% of the country's GDP. The sector has seen strong growth in recent years, with the government's push for infrastructure development and housing.

The Indian construction industry is expected to grow even further in the coming years. This growth is driven by the government's continued focus on infrastructure development, as well as the growing demand for housing. With the right policies in place, the construction industry in India has the potential to become one of the world's leading industries.