NIRMAAN

A Quarterly Newsletter

August - October, 2024

IIEST, SHIBPUR

HOD Speaks

Dear All,

I am thrilled to welcome you to the first edition of the newsletter "NIRMAAN" of our Department of Civil Engineering! This platform aims to foster communication, celebrate our achievements, and share valuable insights within our vibrant community.

The Department of Civil Engineering at IIEST, SHIBPUR is the second oldest in India, established in 1856. It is the oldest and largest Department of the Institute. The Department of Civil Engineering offers Undergraduate, Dual Degree, Postgraduate and Doctoral programs under five major specializations, viz. Structural Engineering, Geotechnical Engineering, Transportation Engineering, Water Resources Engineering and Environmental Engineering.

Our Department has significantly contributed to the development of civil engineering globally. Its influence is revealed in the establishment of various IITs and NITs across the country, which has benefited from its legacy. For over a century, the Department has produced distinguished academicians, researchers, and engineers. Our Department is growing continuously by innovation and collaboration, imparting knowledge through focused teaching-learning methodology, developing innovative thoughts and unremitting upgradation to preserve the outstanding tradition of high quality teaching and world-class research ambience.

In this edition, you'll find updates on executive development programs, ongoing research and consultancy projects, highlights from upcoming conferences, executive development programs and opportunities for collaboration. So let us share our experiences and achievements, as this newsletter is a reflection of our collective efforts and innovations.

As we embark on this journey together, let's continue to inspire and support one another. I look forward to your contributions and to seeing our Department thrive.
Best regards,

Prof. Chaitali Ray
HOD, Department of Civil Engineering

EVENTS

Recently concluded

An online Certificate Course Training Programme on Steel Design, Fabrication and Erection was conducted jointly by the Department and INSDAG from March 01-21, 2024

Technical Training Programme on Road Safety for the Engineers-Officers of PWD, Government of West Bengal, 2024

Executive Development Program

Upcoming

- **Technical Training Program** on Road Safety for the Engineers-Officers of PWD, Government of West Bengal; **Phase 2 : 02 to 06 December, 2024**
- 2 Days **Sensitization Programme** to Impart Modern Technical Knowledge amongst the Technical Officials of Housing Department, Government of West Bengal; **13 – 14 December, 2024**

Conferences

i.4th International Conference on Advanced Technologies for Industrial Pollution Control (ATIPC-2024) - December 17-19, 2024

A pre-conference Workshop will be conducted by Prof. (Dr.) Jacob de Boer, Editor-in-Chief, Chemosphere (SCI Journal of Elsevier) on 16th December, 2024

ii. Mentoring Narula Institute of Technology to organize an International conference NITCON in January 2025

Sponsored Research Projects awarded

Title: Impact of Highway Development on Agriculture, Market Dynamics, and Livelihoods in the Hilly Regions of Nagaland

- **Investigators**: Dr. Deepa Thangjam, Dr. **Anuj Kishor Budhkar**, Vineet Srivastava, Shagolshem Herojit Singh.
- **Agency**: ICSSR (under the special call for Vision Viksit Bharat@2047 (VVB@2047)

Title: Consultative Collaboration on Research between IIEST, Shibpur and KMRCL for Kolkata East West Metro Project

- **Investigator:** Prof. **Ambarish Ghosh**
- **Agency:** Kolkata Metro Rail Corporation Limited

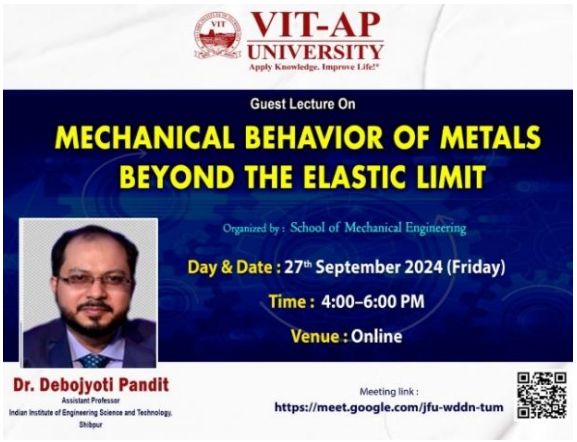
Invited Talk

Invited Talk delivered by **Prof. Ambarish Ghosh** at Haldia Institute of Technology on 6.11.2024 on the topic "***Recent understanding in Geotechnical Engineering with reference to seismic excitation***"

Mr. Pallab Pal, Advisor, Transportation, Transit & Railways, **AECOM** delivered an invited talk to 2nd year UG students on 16th October, 2024 on the topic **"Construction of Metro tunnel in Kolkata"**

Celebration of **Engineer's Day** on 15th September in the Seminar Hall of Dept. of Civil Engineer

Invited Talk delivered by **Prof. Debojyoti Pandit** in VIT-AP University on 27.09.2024 on the topic "***Mechanical behavior of Metals beyond the elastic limit***"



- Checking of design and drawing and issuance of a stability certificate of the FOB near Alipore Zoo after fixing both side glow sign board on the top FOB; **Prof. Soumya Bhattacharjya**
- Vetting of structural drawing of Ground water reservoir/lake at Aligarah, Kalimpong block, Durpin and Sepoydhura, Kurseong Division; **Prof. Soumya Bhattacharjya**
- Vetting of structural design and drawing for G+4 storied residential (1 nos) building at plot no:- DB-161, Premises no- 04-0267, New Town, Kolkata; **Prof. Soumya Bhattacharjya**
- River Bank Protection Work for the Proposed Multistoried Residential cum Commercial Building at 85, Amarendra Sarani, Uttarpara, PIN 712258; **Prof. Ambarish Ghosh**
- Study on Bank Protection work for the Proposed G+4 or G+2 Storied Commercial cum Residential Building Projects at 7/E Mahatma Gandhi Road, LR Dag No. 3187, Khatian No. 1273, J.L. No. 13, Mouza: Serampore, PS: Serampore Ward No. 9 Under Serampore Municipality, Dist. – Hooghly, 712201; **Prof. Ambarish Ghosh**
- Design, Analysis and Submission of Report on Bank Protection work for construction of a New Intake Jetty at Mangal Pandey Water Treatment Plant under North 24Pgs Water Supply Division-I, PHE Dte. Govt. of West Bengal; **Prof. Ambarish Ghosh**
- Study and Design of River Bank Protection System for the Proposed Project; **Prof. Ambarish Ghosh**
- Preparation of Report on River Bank Protection Works for the Proposed Howrah Terminal under redevelopment, West Bengal, India; **Prof. Ambarish Ghosh**
- Vetting of Design & Drawing of Raw Water intake Structure, Kumarganj Block, Dakshin Dinajpur; **Prof. Ambarish Ghosh**
- Model Coal Sample Preparation for TARA (E&W) Coal Mines to achieve VM:17%-20% and GCV:GI2(3700-4000) & G13 (3400-3700)Kcal/kg; **Prof. Saptarshi Kundu** [Co-PI]
- Design of Sheet Piling work at Farakka Super Thermal Power Station (3x200MW, 2x500MW and 1x500MW) FGD Package, India for NTPC; **Prof. Ambarish Ghosh**

Consultancy Projects

- Study and Design of River Bank Protection System for the Proposed Residential Complex at Holding No. 9 & 9/A, G T Road (East), Ward No. 1, Konnagar, WB.-712235; **Prof. Ambarish Ghosh**
- Proposal for River Bank Protection – Report with Recommendation for the Residential Complex Project at the Premises No. 3/A/1 Panchu Dutta Ghat Lane, Konnagar, Hooghly-712235; **Prof. Ambarish Ghosh**
- Vetting and reporting on structural design and drawings for the main factory and raw material godown at the Dhaniakhali, Hooghly Linen spinning unit site; **Prof. Soumya Bhattacharjya**
- Extension of scope of the ongoing project of the Central Pollution Control Board for third party inspection of grossly polluting industries; **Prof. Anirban Gupta**
- Hydraulic Study and Stability Analysis for the Proposed Bank Protection Methodology for "Mixed Use Development Project" at Salt Gollah, Howrah, India; **Prof. Ambarish Ghosh**
- Construction of road from Chandraman Dhura to Beech Goan (Milling) via Mini Hydel Project, Length 5.166 KM, within Jorebunglow Sukhiapokhari Block under WBERSA, Darjeeling Division; **Prof. Sujit Kumar Dalui**
- Detail Design of Bank Protection for river Hooghly for the Project of Ship Building and Ship Repairing at Gadiara, Howrah, West Bengal, INDIA; **Prof. Ambarish Ghosh**
- Health Assessment and Checking of Design of 15 nos. G+10 building at Newtown under WBHB (SUNRAY Housing Housing Project); **Prof. Ambarish Ghosh**
- Approval for Vetting of Structural Design and Drawing for the work "Construction of accommodation facility building (Civil Eork) for registered construction workers at Digha, Purba Medinipur"; **Prof. Tapas Kumar Roy**
- Vetting of Drawing for Upgradation and Modification of Kharagpur Station of Kharagpur Division under AMRIT BHARAT STATION Scheme under the jurisdiction of CPM/GSU/KGP; **Prof. Sujit Kumar Dalui**

Research & Collaborations

PhD Completed

1. Sandip Sarkar (Water Resources Engineering)
2. Soumen Roy (Structural Engineering)
3. Subhadip Kangsabanik (Water Resources Engineering)
4. Srijani Shett (Geotechnical Engineering)
5. Sukanta Karati (Transportation Engineering)

Existing collaborations

International

- An ongoing research project is being funded by ANSYS Inc., USA. Joint guidance of a PhD student is currently being conducted in collaboration with a faculty member of Trinity College Dublin, Ireland.
- Collaboration with researchers from ETH Zurich, University of Pisa, and University of California Davis for ASCE Monograph on Scour at Hydraulic Structures
- Theme Co-Lead from India in IC-IMPACTS [India-Canada Centre for Innovative Multidisciplinary Partnerships for Accelerated Community Transformations and Sustainability]
- Collaborative research on Granular Landslides is being carried out with Dr. Valentin Heller from the University of Nottingham, UK.

National

- IIT Guwahati
- Nagaland University
- Alia University

Continued ...

Memorandum of understanding (MoU)

Bentley Systems (2016): The Civil Engineering Department has established a collaboration with Bentley Systems to secure perpetual and updated access to 61 of Bentley's software tools, including STAAD.Pro, MxRoad, WaterGem, SewerGem, and others. This agreement ensures that the Department's faculty and students have continuous access to cutting-edge software essential for academic learning, research, and project development.

ANSYS Inc (2022): In 2022, the Department entered into a partnership with ANSYS Inc to engage in collaborative research projects. This MoU focuses on utilizing ANSYS software for advanced simulations and analyses in civil engineering. The collaboration is designed to support both academic research and practical applications, enhancing the Department's research capabilities.

Institute of Steel Development and Growth (INSDAG) (2023): The Department has signed a MoU with the Institute of Steel Development and Growth (INSDAG) in 2023 to enhance educational and research activities related to steel construction. This collaboration includes the delivery of online courses and the execution of joint research and consultancy projects, aimed at advancing the knowledge and practices in steel construction. Under this MoU, a 21-day online workshop was organised in March 2024.

National Rural Infrastructure Development Agency (NRIDA), Ministry of Rural Development, Govt. of India (2023): A memorandum of understanding was signed in 2023 with the National Rural Infrastructure Development Agency (NRIDA) under the Ministry of Rural Development, Government of India. This partnership focuses on conducting research projects to improve rural infrastructure development. The collaboration aims to apply innovative engineering solutions to enhance the quality and effectiveness of rural infrastructure projects.

North-East Frontier Railway, Maligaon, Guwahati (2024): A MOU has been signed between IIEST, Shibpur and North-East Frontier Railway, Maligaon, Guwahati for carrying out proof checking of design and drawings of vertical shaft-1 & 2 (including gantry design) and Cut & Cover of Tunnel No. T-12.

Journal Publications

Aon S, Nandi S, Sen S and Biswas S (2024) GRACE based groundwater drought evaluation of Ganga Basin and analysis of drought propagation using wavelet based quantitative approach. ***Science of The Total Environment***, *951*, 175666. DOI: https://doi.org/10.1016/j.scitotenv.2024.175666 (Impact factor 8.2)

Basak SS, Adak A and Alam M (2024) UV-H202-based process for inactivation of Escherichia coli and Staphylococcus aureuson inanimate surfaces: kinetics analysis and relationship between UV dose and log reduction. **J. Hazardous, Toxic, Radioact. Waste**.

Bhattacharya, S, & Dalui, SK (2024) Comparison in aerodynamic modification and auxiliary damping device in mitigation of dynamic wind response of 'V' shaped tall building**. Structures**, Elsevier, 67,106940.

Bhattacherjee D and Viswanadham, BVS (2024) Centrifuge Model Studies on the Use of Hybrid-Geosynthetic Inclusions in Slopes Subjected to Infiltration. https://doi.org/10.1007/s40098-024-00976-9, **Indian Geotechnical Journal** (5 Year Impact factor: 1.5), Springer, 54, 1897–1911.

Chakraborty S and Biswas S (2024) Application of wavelet-based multivariate long short-term memory models in prediction of stage for Teesta River, India. ***Journal of Hydroinformatics***, *26*(8), 2007-2025. DOI: https://doi.org/10.2166/hydro.2024.113 (Impact factor 2.2)

Dey M and Chakraborty S (2024) Seismic performance of reinforced concrete building frames on sloping ground retrofitted with steel and reinforced concrete jacketing, **Innovative Infrastructure Solutions**, 9:441 https://doi.org/10.1007/s41062-024-01764-3

Gautam P, Dwivedi R, Garg P et al. (2024) Evolution of the damage precussor based on the felicity effect in shale. **International Journal of Damage Mechanics**

Ghosh A, Adak A, Mondal B, Barbhuiya NH, and Das I (2024) Efficacious Degradation of 2,4- Dichlorophenoxyacefic Acid by UV-H202 Advanced Oxidation and Optimization of Process Parameters Using Response Surface Methodology. **J. Hazardous, Toxic, Radioact. Waste Mgmt**, 28 (3). https://doi.org/10.1061/JHTRBP.HZENG-1343.

Guin S and Bhattacherjee D (2024) Applicability of Geobags as a Sustainable Riverbank Protection Measure. https://doi.org/10.1007/s40098-024-00895-9, **Indian Geotechnical Journal** (5 Year Impact factor: 1.5), Springer, 54, 800–813.

Halder S and Saha U (2024) Statistical downscaling model for future projection of daily IDF relationship by Markov chain and kernel density estimator. **Journal of water and Climate change**, 15(10), 5002-5020.

Khan I, Das Gupta D and Gupta A (2024) Sewage Treatment by Kolkata's Natural Wetland System. **Nature Environment and Pollution Technology**, 23, 1801-1816.

Konar T, Das A and Ghosh AD (2024) Near-fault earthquake-induced vibration control of a supertall benchmark building using an inerter-assisted compliant liquid damper. *ASCE-ASME* ***Journal of Risk and Uncertainty in Engineering Systems, Part A: Civil Engineering*** in press: 1–12. DOI: 10.1061/AJRUA6.RUENG-1358.

Konar T, Ghosh AD and Basu B (2024) Real-world installations of tuned liquid column dampers for wind- induced vibration control of buildings – some important case studies. ***Structure and Infrastructure Engineering*** in press. DOI: 10.1080/15732479.2024.2420174.

Continued...

Majumder R, Mishra SK, Chakraborty S (2024) A reliability-based design against post-buckling load drop in spherical shell cap with stochastic imperfections, ***International Journal of Non-Linear Mechanics*** 165, 104794, https://doi.org/10.1016/j.ijnonlinmec.2024.104794

Mondal B, Basak SS, Das A, Sarkar S and Adak A (2024) UV-Based Degradation of Fluoroquinolone Antibiotic in Wastewater: Effects of Process Parameters, Identification of Degradation Products and Evaluation of Residual Toxicity. **J. Institute Eng. Ser. A.** https://doi.org/10.1007/s40030-024-00840-2.

Paul S, Ghosh AD and Basu B (2024) A computationally efficient approach to estimate design wave force on seawalls under large amplitude irrotational waves. ***Ocean Engineering*** 311: 118745. DOI: 10.1016/j.oceaneng.2024.118745.

Paul S, Ghosh AD and Basu B (2024) Numerical estimation of wave breaking forces on seawalls. ***Ships and Offshore Structures*** in press. DOI: 10.1080/17445302.2024.2419045.

Ray C, Kar R, Biswas D, Dalui SK and Kundu S (2024) Response analysis of hollow core FRP bridge deck panel with steel girder under moving load. In print, **Iranian Journal of Science and Technology**, Transactions of Civil Engineering (accepted).

Ray C, Sarkar S, Kar R, Biswas D, Dalui SK and Kundu S (2024) Temperature induced characteristics of FRP bridge deck and a study on combined effect of thermal and vehicle loads. In print, **Bridge Engineering**, American Society of Civil Engineers (**ASCE**), United States (accepted).

Ray P, Ghosh A and Bhattacherjee D (2024) Theoretical and numerical studies on strip footing resting on encapsulated soil mass. In print, **Transportation Infrastructure Geotechnology** (Impact factor: 2.6/2023), Springer.

Ray P, Tabish Q, Ghosh A, Kundu S and Bhattacherjee D (2024) Physical model study on failure mechanism of strip footing on reinforced granular deposit. https://doi.org/10.1080/19648189.2024.2356703, **European Journal of Environmental and Civil Engineering** (Impact Factor: 2.3), Taylor and Francis, 1–25.

Roy A, Chakraborty S and Adhikari S (2024) Seismic reliability analysis of structures by an active learning-based adaptive sparse Bayesian regression approach *International* ***Journal of Non-Linear Mechanics*** 165, 104817 https://doi.org/10.1016/j.ijnonlinmec.2024.104817

Roy D, Palermo M, and Pagliara S (2024) Control of Surface Plastic Transport in Natural Streams. **Journal of Hydraulic Engineering**, 150(4), 04024013.

Sarkar A , Thakur B and Gupta A (2024) Monitoring of construction dust and assessment of probable increment in mortality risks for exposed construction workers at Kolkata, India. **Atmósfera**, 38, 779-799.

Sarkar N and Ghosh AD (2024) Application of conical spring to maintain tuning of mass damper for wave-induced vibration control of offshore jacket platform subjected to changes in natural frequency. ***Ocean Engineering*** 312(P3): 119352. DOI: 10.1016/j.oceaneng.2024.119352.

Sen S, Nandi S and Biswas S (2024) Application of GRACE-based satellite estimates in the assessment of flood potential: A case study of Gangetic-Brahmaputra basin, India. ***Environmental Monitoring and Assessment***, *196*(10), 997.DOI: https://doi.org/10.1007/s10661-024-13174-0 (Impact factor 2.9)

Thapa A, Roy A and Chakraborty S (2024) Reliability analyses of underground tunnels by an adaptive support vector regression model, ***Computers and Geotechnics*** 172, 106418 https://doi.org/10.1016/j.compgeo.2024.106418.

Wibisono DY, Gutierrez M and Majumder D (2024) Experimental investigation of tunnel damage and spalling in brittle rock using a true-triaxial cell. **International Journal of Rock Mechanics and Mining Science**, 182, 105884.

Conference Publications

Atin R, Chakraborty and S Adhikari (2024) Seismic reliability analysis of structures by an active learning-based adaptive sparse Bayesian regression approach. *ASCE* ***Engineering Mechanics Institute 2024 International Conference***, Sept 11-13, Vienna, Austria.

Bagchi, Sinha MK, Roy B, Kar D and Dutta S (2024) Retrofitting Measures of Distressed Structural Members of a RCC Building-A Case Study on the SOPC Building at Kolkata. **10th International Conference on CONcrete under Severe Conditions-Environment and Loading**, Chennai, India

Das D, and Adak A (2024) Risk Assessment for Arsenic in Groundwater in the Ganges Delta of West Bengal, India. **Sustain. Adv. Technol. Environ. Manag**., 79-95.

Das S and Adak A (2024) Adsorptive Removal of Methylene Blue and Congo Red using Raw Rice Husk as a Low-cost Adsorbent. Proc. **Int. Conf. Adv. Technol. Ind. Pollut. Control.**

Das S, Adak A and Barui A (2024) Fabrication of Cellulose Acetate-Based Electrospun Nanofiber Membranes and Its Application for Ciprofloxacin Removal. **Sustain. Adv. Technol. Environ. Manag.**, 11-22.

Gayen S, Das A, Alam MM, Ali A, Mishra P and Adak A (2024) Performance Evaluation and Enhancement of Wastewater Treatment Plant: A Case Study on Abrasion Paper Manufacturing Industry. Proc. **Int. Conf. Adv. Technol. Ind. Pollut. Control.**

Gulzar A, Kundu S and Ghosh A (2024) Mitigation of Liquefaction induced Settlements under Shallow Strip Footings using Ground Densification. **Lecture Notes in Civil Engineering,** Vol. 478, Babu T. Jose et al. (Eds), Springer (pubs.), doi:10.1007/978-981-97-1745-3

Rehman MU, Kundu S and Bhattacherjee D (2024) Numerical Analysis on the Stability of Upstream Mine Tailings Dam under Seismic Loading. Chapter 29, **Lecture Notes in Civil Engineering**, Vol. 491, Babu T. Jose et al. (Eds), Springer (pubs.), doi:10.1007/978-981-97-2700-1

Tabish Q, Kundu S and Ghosh A (2024) Analysis of Settlement Profiles of Shallow Strip Footings Resting on Geosynthetic-Reinforced Sand, **Lecture Notes in Civil Engineering**, Vol. 477, Babu T. Jose et al. (Eds), Springer (pubs.), doi:10.1007/978-981-97-1741-5

Hossain S, Saha P, Kumar R and Budhkar AK (2024) Determinants of walking as a mode of transportation: A case study of Howrah' accepted for presentation in **International conference on Computer- Aided Modeling for the Sustainable Development of Smart cities**' to be held in NERIST, Arunachal Pradesh, India. (Date of acceptance: 30 October 2024)

Achievements

Best paper awards

Dr. Sujata Basu and Dr. Pritam Saha were awarded the Best Paper Award by International Association of Traffic Safety Sciences (IATSS) for the paper titled “Evaluation of risk factors for road accidents under mixed traffic: Case study on Indian highways” in April, 2024

Recent achievements of Students

Outstanding performance of students in international domain:

Name	Institution	Specialization	Batch
Sanchita Das	Michigan Technological University, USA	PhD in Structural Engineering	2024
Bhaswati Sen	Purdue University	MS in Water Resources	2024
Siddhartha Chatterjee	TU Dresden, IHE Delft	MS in Erasmus Mundus Joint Masters in Flood Risk Management	2024
Kavita Jain	UC Berkeley	MS in Transportation Engineering	2024

Students' Corner

ARTICLE by ARKADIP SOM (2024CEB014) 1st Year UG student

Transition from traditional soil bricks to modern fly ash bricks & it's impact in construction industry

The evolution of brick production has had a profound impact on the construction industry, with that transition from traditional soil bricks to modern fly ash bricks representing a major shift in materials and technology. Understanding the reasons behind the transition, its benefits and the challenges faced is crucial for civil engineers and construction professionals.

REASONS BEHIND THE TRANSITION: The transition caused because of some environmental and technical issues in the traditional soil bricks

1) Depletion of topsoil
2) High energy consumption
3) Air pollution etc.

CHALLENGES IN TRANSITION:

1) Availability of raw materials
2) Perception and market acceptance
3) Quality control etc.

The transition from soil bricks to fly ash bricks marks significance stay forward in sustainable construction practices. Fly ash bricks offer environmental economical and performance benefits that align with the modern goals of civil engineering. That makes fly ash bricks potent for eco-friendly construction in future.

Abhinav Gupta (2021CEB026), 4th year UG Student participated in the E.P.I.C. 6.O Analytics Challenge organized by TVS Credit and secured as a National Finalist among the top 14 out of over 100,000 participants.

Joyanta Debnath (2021CEB003),
4th year UG Student worked on the following:

a. VARUNA - A Water Quality Index Calculator, a Python-based program under IWM Dhaka.
b. Analyzed a six-month water quality trend in the Little Feni River in 2023 under IWM Dhaka

Joyanta Debnath (2021CEB003), Rudradeep Das, Avik Das, and Abirbhab Bose, participated in INSDAG 2023 as a team and were awarded one of the Best Innovative Structural Designs of 2023.

Alumni Corner

Building Bridges to Success: Should You Pursue an MBA After a B.Tech. in Civil Engineering?

If you're a civil engineer wondering about your next career step, an MBA could be a game-changer. After spending years studying structures, soil, and designs, many civil engineers face a decision: stick with the technical side of engineering or add business management skills to their portfolio. But is an MBA really worth it for someone in civil engineering?

The answer depends on what you want from your career. A B.Tech. in civil engineering provides strong technical skills essential for designing, planning, and executing projects. But an MBA takes this foundation further, opening up management and leadership roles that need not just technical expertise but also a keen understanding of business. Imagine being able to oversee the entire life cycle of a construction project—not just the engineering aspects, but budgeting, timelines, client communication, and team dynamics. That's what an MBA can offer.

By Vasunith (2024 Graduate Deputy Manager, Business Technology Operations Group, ICICI Bank

For civil engineers, MBA specializations like Construction Management or Project Management are especially relevant. These programs teach advanced skills in project planning, cost control, and risk management—all directly related to overseeing large engineering projects. By gaining this broader perspective, you're better positioned for roles like Project Manager or Construction Manager, where you're responsible for keeping everything on track and managing both technical and financial aspects.

The construction and infrastructure sectors are also rapidly evolving, bringing challenges around sustainability, environmental responsibility, and urban development. Specialized MBAs, like those in Environmental Management or Real Estate and Urban Infrastructure, provide insights into these emerging areas, helping you stay ahead of industry trends. These programs can equip you to handle green building practices, navigate environmental regulations, or even contribute to urban planning. Companies increasingly seek civil engineers who understand these big-picture issues, and having an MBA gives you the versatility to meet those needs.

Adding an MBA to your B.Tech. also opens the door to entrepreneurial ventures. Many civil engineers who pursue MBAs go on to start their own construction companies, consultancies, or real estate businesses. The combination of technical expertise and business acumen is perfect for anyone looking to lead in the field rather than just execute someone else's designs. An MBA in General Management with electives in infrastructure, for example, offers a well-rounded understanding of business strategy, finance, and operations—all essential for running a successful company.

The time and investment required for an MBA aren't trivial, but if you aim to step into leadership, the payoff can be substantial. It's about more than just climbing the corporate ladder; it's about expanding the kind of impact you can have on projects, teams, and even the industry as a whole. You'll find yourself equipped to not only solve engineering challenges but to make strategic decisions that drive projects forward and improve outcomes.

In short, an MBA isn't a one-size-fits-all decision, but it can be transformative if you're looking to bridge the gap between engineering and management. If you're ready to broaden your horizons, add to your skill set, and step into roles with greater responsibility, an MBA might be the perfect next step to help you build the career you envision.

Academic Arena

BoAC approved new course structure

The course structures / syllabus has been made keeping in mind the requirements of the industries and academia. The UG and PG Course structures / syllabi were framed and revised in July 2024 (to be applicable from academic year 2025). Some salient features of the new course structure (approved by the BOAC, Civil Engineering Department) include the following new/unique courses.

- Climate Change Adaptation (UG)
- Climate Resilient Infrastructure (UG)
- Management of Plastic and E-waste (UG)
- Geoinformatics in Earth Observation and Data analysis (UG)
- Machine Learning (ML) in Civil Engineering (UG)
- Cyber-Physical Systems for Civil Engineering (UG)
- Pre-Engineered Buildings and Structures (PG)
- Geotechnical Investigations and Instrumentation (PG)
- Waste Management and Circular Economy (PG)
- Climate Change Impact Analysis (PG open elective)

Editorial Team