



MASTER'S IN CONSTRUCTION ENGINEERING AND MANAGEMENT

FACULTY OF TECHNOLOGY



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Emerging Trends in Construction Engineering and Management

As the global construction market anticipates reaching USD 19.52 trillion by 2027, with a compound annual growth rate (CAGR) of 6 percent.¹ The role of construction engineers and managers becomes increasingly pivotal. These professionals ensure the efficient delivery of safe, functional, and innovative infrastructure solutions, leveraging their comprehensive understanding of the project lifecycle—from conceptualization and planning to execution and completion. Their expertise not only enhances project outcomes by managing risks and optimizing complex processes but also aligns with regulatory standards and sustainability goals, reinforcing the importance of effective construction management in meeting the demands of this rapidly evolving industry.

¹ *Middle East Property and Construction Handbook 2022 - Global construction prospects 2024* (aecom.com)

About CEPT University

CEPT University focuses on understanding, designing, planning, constructing, and managing human habitats. Through its education, research, and advisory activities, it aims to enhance the impact of habitat-related professions in enriching the lives of people in India's villages, towns, and cities.

The University comprises five faculties: the Faculty of Architecture (FA), the Faculty of Planning (FP), the Faculty of Technology (FT), the Faculty of Design (FD), and the Faculty of Management (FM).

Faculty of Technology at CEPT University

CEPT established the **School of Building Science and Technology (SBST)** in 1982, focusing on issues related to the construction and management of human habitats and cities. SBST has since been renamed the Faculty of Technology (FT).

The Faculty of Technology offers a five-year Bachelor's in Civil Engineering (Honours) and 4 two-year Postgraduate (PG) programs. The PG programs include **Master's in Construction Engineering & Management (MCEM)**, **Master's in Structural Engineering Design (MSED)**, **Master's in Geomatics (MGEO)**, and **Master's in Building Energy Performance (MBEP)**.

What is Unique About Programs at FT?

1. **Studio Based Pedagogy:**
 - Teacher Student Ratio 1:8
 - Creative Problem Solvers
 - Innovative Engineers
2. **Pre-Admission Scholarships**
3. **Earning while Learning**
4. **Study abroad**
5. **Practical Training**
6. **Cutting edge Library and workshops**

Student Chapters

Below are the Student Chapters initiated by the Faculty of Technology:

1. IPA – Indian Plumbing Association – Established in November 2021.
2. IC-ACI - India Chapter of American Concrete Institute -Established in December 2022

Collaborations

The Faculty of Technology (FT) is eager to establish collaborations with renowned industries through Memorandums of Understanding (MOUs) and Expressions of Interest (EOIs), with a focus on undertaking research and development activities in the construction sector. The three major domains of collaboration include partnerships with industries for Dissertation Research Projects (DRPs), placements, and internships; collaborations with international universities for exchange programs; and student chapters affiliated with professional associations.

The following are the updates till date-for the year-2021-2024.

(A) Industry MOUs DRP Research Collaborations

1. CRDF Center for Infrastructure Projects
2. Visilean Cloud Based Solution Providers
3. Godrej Properties
4. Shivalik Groups

(B) FT International Universities - Exchange Programs

1. University of Melbourne – Australia
2. Polis University – Albania
3. HFT Stuttgart University – Germany
4. Instituto Politécnico de Castelo Branco(IPCB) – Portugal
5. Polimi University - Italy

Master's in Construction Engineering and Management

The Master's in Construction Engineering and Management (MCEM) program, previously known as Construction Project Management (CPM), was established in 1995 at CEPT University. This two-year, full-time postgraduate program offers a degree of Master's in Construction Engineering and Management.

Recognizing the vital role that construction managers play in shaping the built environment and infrastructure, this program aims to equip engineers and architects with the necessary skills to excel in the field of construction engineering and management. The teaching methodology at CEPT University is centered on enhancing professional competencies through a studio-based pedagogy that simulates real-life projects, including buildings and infrastructure. The curriculum is designed to strengthen students' conceptual understanding, analytical abilities, and problem-solving skills.

Graduates of the MCEM program are well-prepared to build successful careers in construction management with leading public and private sector organizations. Many alumni pursue opportunities with top construction companies, infrastructure developers, and consultancy firms both in India and internationally. Additionally, some graduates choose to continue their academic journey through doctoral studies and advanced research at prestigious universities and research institutions around the globe.

Dean's Message



Dr. Aanal Shah

Dean, Faculty of Technology

“CEPT’s teaching programs aim to develop thoughtful professionals, engaging students in studios that involve life-like challenges of the industry. This objective is achieved through the collaborative efforts of experienced practicing professionals and faculty members at the university. The MCEM program is highly regarded in India, enabling students to understand the dynamics of the construction industry. Students from this program emerge as proficient construction managers through efficient planning of construction activities and implementing advanced construction practices during their two-year tenure at the university. It is inspiring to observe that graduates from this program have embarked on successful professional careers as entrepreneurs and construction managers. I am confident that the students of this program will be valuable assets to any organization, as they are trained to tackle professional challenges with a philanthropic approach that addresses broader societal issues.”

Program Chair's Message



Dr. Jyoti Trivedi

Program Chair

Core Faculty

The Master's in Construction Engineering and Management program at CEPT University is dedicated to cultivating exceptional construction project managers through innovative teaching methodologies, cutting-edge learning aids, and state-of-the-art research facilities. This program equips students with the skills needed to navigate and adapt to emerging technologies and trends in the construction industry.

As the sector increasingly embraces automation and digitization, our curriculum focuses on fostering digital transformation within the Architecture, Engineering, Construction, and Operations (AECO) sector. This highly sought-after program covers all vital aspects of the construction project lifecycle, preparing students to excel in a dynamic and evolving market. By combining theoretical knowledge with practical application, the Master's in Construction Engineering and Management ensures that graduates are well-prepared to lead and innovate in their future careers.

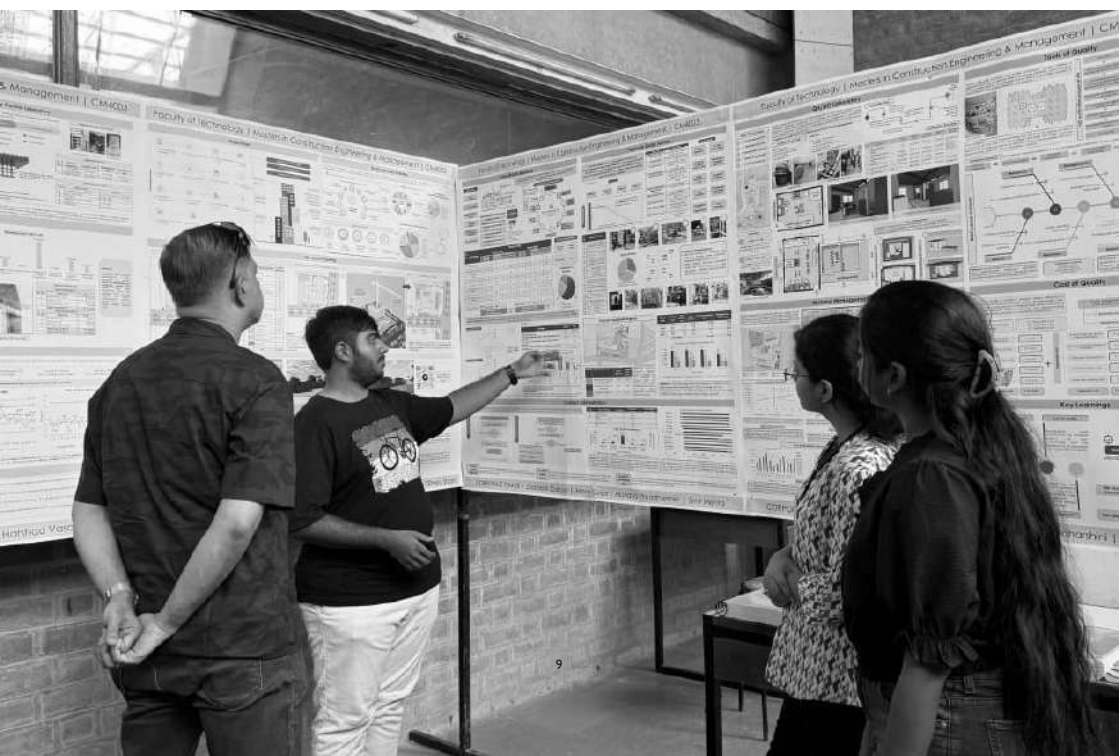
Core Competencies

The role of engineers in the construction industry is evolving to meet the demands of the future. The MCEM program's learning pedagogy is designed to equip young professionals with the skills necessary to address the sector's challenges and changing dynamics.

Students are not only trained in technical and managerial aspects but also in interpersonal and software skills, enabling them to excel in a fast-paced world. We produce competent professionals capable of taking on challenges and trained to add value to the real estate and infrastructure sectors. In addition to core courses, elective courses, and research projects, the program develops students' theoretical, conceptual, practical, and analytical abilities while enhancing problem-solving skills through peer learning.

The training of professionals in this program focuses on the following areas: project management, contract management, construction quality, safety and equipment management, supply chain management in construction projects, modern construction materials and technologies, and computer applications in construction.





Course Pedagogy

The Master's in Construction Engineering and Management program is a flagship course that promotes careers in construction management. This program is designed as a knowledge consortium encompassing construction technology, organization, time management, information and communication management, team management, risk management, and presentation skills.

The MCEM program focuses on building professional capacities and is centered on a studio-based pedagogy that includes the simulation and analysis of real-life problems. For the first three semesters, students are required to complete a 12-credit studio course along with three mandatory 2-credit courses. Each semester, a wide variety of interdisciplinary elective courses are offered to students from all five faculties. In the fourth semester, students concentrate on their Directed Research Project (DRP). Additionally, students learn to use project management software such as MS Project and Primavera, as well as BIM applications, and engage in simulating live projects to gain exposure to real-world practices. The program emphasizes the core principles and techniques of planning, controlling, executing, and operating construction projects.



Course Structure

The Master's in Construction Engineering and Management is a two-year (four-semester) program at CEPT University. The coursework is designed to be hands-on during the first three semesters, where students are required to complete a 12-credit studio course along with three mandatory 2-credit courses.

Total: 80 credits

Studio: 12 credits each, Mandatory courses: 2 credits each* DRP: 14 credits

Others (Electives + SWS): 12 credits

The curriculum is divided into studio courses and lecture courses. The studio courses focus on Construction Project formulation and appraisal, Construction Project Execution Monitoring and Control, Integrated Construction Practices (Building Information Modelling (BIM) Process Implementation, Digitization in construction and Lean Practices). The lecture courses help the students to explore skills of construction finance, strategic management, advanced construction practices, construction contracts, quantitative techniques, and risk management.

Construction Project Formulation and Appraisal Studio Sem-I:

Understanding all aspects of Formulating detailed project conceptualization and development phase of the project life cycle.

Construction Project Execution Monitoring and Control Studio Sem-II:

The studio will equip students to investigate and analyze construction execution processes and gain knowledge of preconstruction activities, safety, quality, resources, and productivity planning monitoring aspects of construction projects. and control processes.

Integrated Construction Practices Studio Sem-III:

The student will be able to Investigate Integrated approach of collaboration in the project domain of architecture, structure and MEPF under platform of BIM and Lean Construction Practices.

Computer Applications in Construction:

The course is analytic approach towards applying tool of project management software (MS Project/Power BI) formulation and implementation in the project planning and scheduling.

Construction Contracts:

The course output is understanding essence of contracts, different methods of project delivery and the roles & responsibilities of all constituencies involved in design and construction process.

Effective communication:

Students will be able to utilize writing as a powerful tool, employing forms and techniques learned during intensive practice, to ideate and effectively convey their logic, processes, analysis, and field expertise to diverse audiences in both professional and academic settings.

Facility Management: Operations and Maintenance:

The course output is to understand why it is important to incorporate Post occupancy building Maintenance aspects into consideration whist early stages of construction and how to make the post-construction works effective and optimal. Analysis and Investigation of operation and maintenance Audits of Road Infrastructure projects.

MEPF Services:

The course of MEPF is of system integration of construction projects in coordination of services and utilities. It will develop good Insight for Space Planning of MEPF Services. Understanding of Codal/Design considerations and Analytical Approach for evaluation of design and better understanding for Coordination of Services for Project Management.

Advanced Construction Practices:

It will build ability to Plan and Schedule High-rise Building Construction Practices with Modular shuttering or tunnel formwork system, precast and pre-engineering building solutions. Students will be able to plan for equipment management, underground construction methods and infrastructure projects.

Strategic Management for Construction:

The students will be trained to analyze a company's strategy in relation to its global environment, using selected strategic management concepts and tools.

Construction Safety Practices course:

The student will be able to analyse safety practices in construction projects from the perspective of identification of hazards of construction and able to recommend appropriate control measures to eliminate or minimize hazards. Students will be able to evaluate safety compliances pertaining to construction practices. Identifying the requirements for health and safety at work, understanding the health and safety management systems.

Directed Research Project:

Research Thesis program is introduced to complement the practical work and problem-solving abilities of students and to contribute to a higher professional competence and developing an attitude towards research.

Electives & Summer Winter School

CEPT University cherishes the individual interests and abilities of its students. Students get a chance to chart their own learning paths by completing a portion of their credits by choosing from a wide range of elective courses offered at any of the five faculties at the University. It gives them a greater exposure to a wide range of disciplines related to built-environment and an opportunity to collaborate on a multi-disciplinary campus.

The Summer Winter School (SWS) programs differ from the regular semesters in terms of structure, approach and content. The key words that capture the spirit of SWS are experiment, variety and innovation. They explore emerging areas, provide space to test new ideas and methods, facilitate in-situ experience, help understand critical sites and situations, and create opportunities to learn by making. The courses in SWS are intense and are for short durations of between two to four weeks. Following is an indicative list of courses opted by our students:

Electives:

- ERP for Construction
- Construction Economics and Finance
- PPP for Infrastructure
- Smart Cities
- Design Thinking and Business Model Generation
- Public Policy Designing
- Understanding concepts and criteria for Green Building Rating System

SWS Course:

- Light Infrastructure: Construction as Activism
- Architectural and Urban Design Consideration for specially-abled people
- Tracking the Water: Water Network's Role in Urban Climate Risk of Guwahati City
- Intelligent Aggregated Architecture
- Programme Management



Learning Environment & Campus Life

The atmosphere on the CEPT campus is lively and conducive to free thinking. Interdisciplinary learning is encouraged, allowing students to collaborate with other built-environment professionals within the CEPT University ecosystem. The University frequently invites some of the brightest minds from around the world to speak to students about cutting-edge developments in construction, architecture, planning, design, urban habitat development, and other global issues.

Students have access to workshops, a library, and fabrication laboratories equipped with state-of-the-art facilities. CEPT has recently initiated the FT-BIM Advancement Lab in association with Bentley BIM Institute, featuring over 50 software programs. This facility will serve as the nucleus for a consortium of facility owners, contractors, consultants, and researchers, formed to address need-based research for the industry.

Sports competitions such as the Amity Cricket Cup, Volleyball Tournament, Box Cricket League, and others foster a positive environment and provide ample opportunities for participation.



Student Activities

CEPT University boasts a multifaceted culture both on and off-campus, reinforcing its image as an institution that promotes the all-around development of its students. The diverse community comes together to celebrate traditional and regional festivals throughout the year. Sports competitions such as the Amity Cricket Cup, Volleyball Tournament, Box Cricket League, and others foster a positive environment, providing ample opportunities for participation.

At the Faculty of Technology, Student Chapters organize online and on-campus events for students to meet and learn from industry professionals and engage with peers. The FT newsletter is published quarterly by the student body, highlighting student and faculty activities and achievements, important events, alumni interactions, and placement and internship details, along with industry insights. Our strong alumni network enables students to connect with former students regarding future career prospects through the Student-Alumni Interaction platform.

Our students also actively participate in national scholarship programs, conferences, and technical competitions. The Faculty of Technology collaborates with premier institutes such as ESRI and celebrates Engineer's Day, GIS Day, and Remote Sensing Day with active student involvement. Each year on Engineer's Day, students work around a specific topic to raise awareness through role-play activities, lectures from eminent personalities, quiz contests, and more.



Participation and Achievements

2024

- Students became part of the Collective of Real Estate Women (CREW), Ahmedabad Chapter organized by Godrej Properties Limited, an initiative to empower women in the AECO industry.

2024

- Student presented a paper at the 8th International Conference on Construction, Real Estate, Infrastructure, and Project Management (ICCRIP) hosted by NICMAR University and was honored to secure second position.

2024

- Student secured a silver medal under the 'Digital Construction Skill' category at the National Skill Competition 2024 organized by the National Skill Development Corporation (NSDC) under the Ministry of Skill Development and Entrepreneurship

2023

- Students from the MCEM program showcased their research at the Indian Lean Construction Conference 2022. Their paper, "Choosing by Advantage for a Commercial Project with BIM Implementation," was published in Sustainable Lean Construction (Springer) on December 2, 2023.

2023

- Student presented a paper on 'Claims Management for Construction Project' at the 7th International Conference on Construction , Real Estate, Infrastructure and Project Management hosted by NICMAR University.



Collective of Real Estate Women (CREW), Ahmedabad Chapter



National Skill Competition 2024 organized by the National Skill Development Corporation (NSDC)



8th International Conference on Construction, Real Estate, Infrastructure, and Project Management (ICCRIP)



7th International Conference on Construction , Real Estate, Infrastructure and Project Management

Teaching Team



Devanshu Pandit (PhD)



Ganesh Devkar (PhD)



Jyoti Trivedi (PhD)



Minu Agarwal (PhD)



Vatsal Patel (PhD)

Visiting Faculty

Alpesh Panchal

Founder | Acumen Technocrat

Margie Parikh

POSH Expert certified by TUV SUD & ISTD

Dr. Bhargav Dave

Founder & CEO | VisiLean Ltd.

Paramjit Lota

Manager – Customer Success | VisiLean Ltd.

Deep Shah

GM-Business Development & Tendering |
Riviera Infraprojects Pvt. Ltd.

Parthiv Pandit

Proprietor | Dishant Consultancy

Devendra Bathija

EHS Consultant | NOBLE EHS Consultants

Reshma Shah

Project Director | CoE-INFRA | CRDF

Kushal Shah

Sr. Consultant – Risk Advisory | Ernst & Young

Sanjana Meghwani Rami

Assistant Manager | Venus Infrastructure

Manushi Desai

Youth Connect Foundation

Vishal Thakkar

Founder Director | Tridha Advisors Pvt. Ltd

Lectures and Webinars

Mr. Siddharth Lodha | CBRE

Industrial planning/ feasibility and emerging trends
in the industrial segment| 17th August 2023

Mr. Anup Shah | Godwitt Construction

Demand, Market and Location Analysis of Real Estate and Industrial Projects | 21st
August 2023

Mr. Mehul Khakhi | Mott MacDonald

Construction Contracts | 25th September 2023

Mr. Virat Debhar | Knowledge Kraft and GAB India

Quality Management in Construction Projects | 9th February 2024

Mr. Umang Bhawsar | PERI

Exploring Advanced Construction Technology: PERI Formwork | 2nd April 2024

Mr. Hiren Patel and Team | Aashir Engineering Pvt. Ltd.

BIM Implementation in AEC Industry- Envisioning IPD | 31st July 2024





Past Recruiters

Graduates of the MCEM program are doing impactful work and building their careers in government organizations, corporate houses, academic and research institutes, and as entrepreneurs and tech start-up founders in the urban sector.

Why hire us?

1. Beyond Four Walls

The teaching pedagogy at CEPT emphasizes the practical application of knowledge. The complete life cycle of a project is studied, and the theory involved in managing a project is supplemented with real-life examples in the studio. Additionally, exposure to live projects through internships and expert lectures provides limitless learning opportunities for students, extending far beyond the four walls of the classroom.

2. Future Ready

Incorporating futuristic, technology-dependent learning, the MCEM program ensures that students acquire the necessary software skills required in the industry. The combination of theoretical knowledge and technical skills helps students adapt quickly on-site, making them competent in finding the perfect blend of diverse disciplines.

3. Master of All Trades

The university offers students a wide variety of elective courses across all disciplines, allowing them to broaden their horizons and expand their skill sets. This flexibility enables them to develop their soft skills and provides a learning experience that transcends the classroom. The opportunity to choose topics of personal interest and integrate them into their skill set helps them stand out from their peers.

4. Guided by the Best

Students in the MCEM program are guided not only by outstanding faculty but also by industry leaders associated with reputed institutes and organizations. The review, evaluation, critique, and guidance from top professionals in the field help shape these young minds and provide a blueprint for both the institution and the students to evolve in academic pursuits.

5. Balancing Act

CEPT University strives to produce students with a holistic personality. Presentations form an integral part of the curriculum, equipping students with essential soft skills alongside technical know-how. This comprehensive development fosters conceptual clarity and leadership abilities, training students to structure their ideas logically.

Why hire us?

6. Assortment of the Best

The MCEM cohort is composed of students from architecture and civil engineering disciplines, all of whom have successfully cleared a series of rigorous aptitude and technical assessments. This diverse background fosters a conducive environment for positive learning and productive discussions, significantly enhancing their overall development.

7. A Class of Its Own

The culture within the MCEM program cultivates graduates who emerge as well-rounded professionals, equipped with proficiencies that span technical understanding and artistic skills. Today, our alumni are among the most sought-after executives in India and abroad. We take pride in having developed some of the industry's best leaders, and we continue this tradition year after year.

8. We Adapt

CEPT University is dedicated to creating leaders who embrace challenges and seamlessly adapt to change. This fundamental outlook has empowered both management and students to navigate uncertain situations, such as a global pandemic, without compromising the quality of their work. Delivering exceptional outcomes on time is the cornerstone of the education received by MCEM graduates.

Alumni Testimonials



Ishan Juneja

Founder,
Prowess Design & Management
Consultants

"As an architect, I enjoy witnessing the progress of the projects I design on the construction site. However, there are few opportunities to learn about the practical aspects of building construction. To gain more practical and managerial knowledge in this field, I opted for the Master's in Construction and Project Management from CEPT University. The course covers nearly all facets of the construction industry, including advanced construction technologies, project planning, contract management, fundamentals of real estate, project finance, facility management, and business development, among others. Upon completing the program, I felt confident that I could take on any role in top organizations within the real estate sector. In my current position at CBRE, I am applying these skills to manage the business and multiple client accounts effectively."



Harish K.V.S

Associate Project Manager,
ATKINS

"The CEPT MCEM course adopts a practical, studio-based pedagogy that aligns with industry standards. The curriculum covers all stages of the project life cycle, including inception, development, execution, and operation and maintenance. The course helps students grasp the broader context of construction project management by exposing them to subjects such as contracts and finance, enabling them to fit into a variety of job profiles."



Rushit Modi

Project Manager, Synergy
Properties

"The MCEM course design ensures the amalgamation of technical and managerial subjects relevant to the industry. It is one of the top courses in the country for advancing an engineer's mindset and skill set to managerial and leadership levels. The curriculum holistically covers all topics, from core civil engineering to finance, management, real estate, BIM, industrial software, and more. The core and visiting faculty members are extremely experienced and highly regarded in their respective fields. Interacting with some of the best minds and trailblazers in the industry is one of the most valuable aspects of studying here. Collaborating with students and faculty from various fields within the built environment enhances understanding of different approaches, which is beneficial for future professional collaboration. Studying at CEPT was truly a life-changing experience!"



Porus Patwari

Sr. Associate (Executive in
Transaction & Corporate Finance),
EY

"The construction industry is one of the few that still prioritizes experience over talent, which often contradicts the educational approach of most engineering institutions in India. However, the studio-based approach of the MCEM program combines theoretical knowledge with practical application through exposure to project sites and stakeholders, providing me with a comprehensive understanding of the industry. This approach prepared me for the industry by helping me grasp its past and present, while equipping me with the knowledge, tools, capabilities, and confidence to shape its future."

Recruiter Testimonials



Mr. Jatin Shah
Chief Strategy Officer
Colliers India

“The specialized MCEM course at CEPT University produces competent professionals capable of tackling challenges and trained to add value to the real estate industry. These students have worked with us as employees and interns, excelling in their assigned tasks. The key roles of Design Coordinators, Development Managers, and Planning Managers require a deep understanding of clients’ needs, which our students have consistently fulfilled. They develop and implement strategies critical for successful project completion while ensuring effective collaboration among all consultants, designers, and clients. This highlights the comprehensive knowledge they have gained from the course and how seamlessly they can relate it to the experience they continue to accumulate.”



Mr. Jairam Panch
Chief Operating Officer
Turner International India

“We are extremely pleased with the quality and caliber of students from the CEPT Construction Engineering and Management program. The students arrive with excellent attitudes, relevant industry skills, and practical knowledge, coupled with a strong desire to learn and contribute consistently. Much of the credit goes to the faculty, curriculum, and the supportive environment that the CEPT campus provides in shaping young minds in their quest for excellence. As an alumnus of CEPT University, it gives me a sense of pride and honor to be associated with my alma mater over the years.”

University details

CEPT University, K.L. Campus, University Road,
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Submit you application on
<https://admissions.cept.ac.in/cept-adm-login.php>