Khandesh Bahuuddeshiya Sanstha's

College of Engineering & Technology,

North Maharashtra Knowledge City, Jalgaon

News Letter

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Civil Engineering Department

Vision

The Department shall be the center of excellence with the highest level of achievement in technical education.

Mission

1. Overall development of students inculcating in them the ground reality.

2. Being the choice of students, parents and employers in India for technical Education.

3. Maintaining the best infrastructure, developing knowledge and skills.

Program Outcomes

	Program Outcomes
PO 1	**Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
PO 2	**Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
PO 3	**Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
PO 4	**Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
PO 5	**Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
PO 6	**The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
PO 7	**Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
PO 8	**Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
PO 9	**Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO 10	**Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions
PO 11	**Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
PO 12	**Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Program Specific Outcomes (PSOs)

PSO 1	Ability to apply theoretical knowledge for specific field applications: a civil engineering graduate must be able to identify the constraints of a real world problem and must be able to decide appropriate combination of technology to resolve the problem. S/he must be able to implement the solution.
PSO 2	Ability to work with advanced equipment: a civil engineering graduate must be able to deal with advanced equipments used for various civil engineering applications for faster and precise observations.
PSO 3	Awareness about alternative and blended construction materials: natural materials are getting scarce and their over exploitation is causing environmental damages. A civil engineering graduate must be aware about the applications of alternative and blended construction materials which are more sustainable.

Workshop

Online workshop

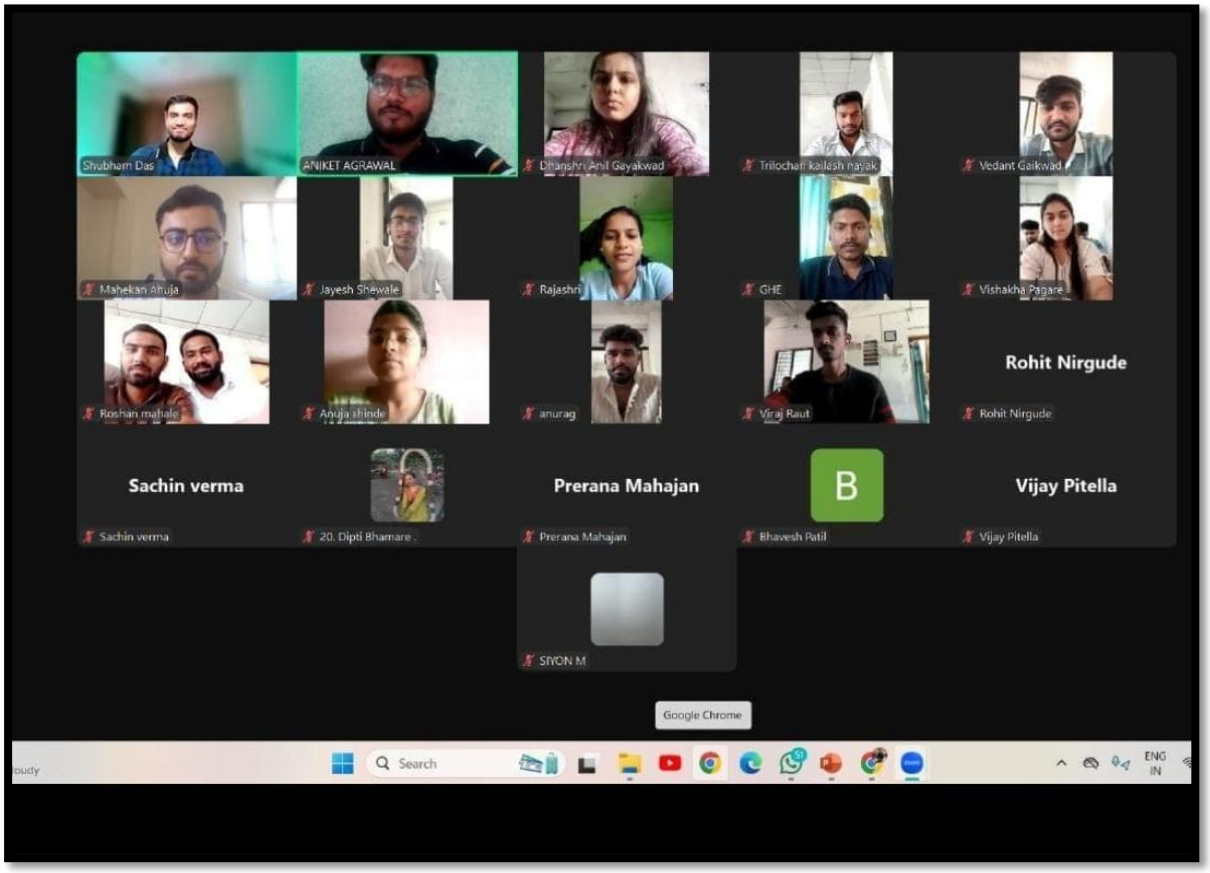
The Department of civil Engineering has organized a Workshop on **"SPACE PLANNING & VENTILATION IN HOME DESIGN"** on 08/04/2025(Tuesday) between 6:30 PM to 7:30 PM, through the Zoom platform.

The lecture in this workshop was given by **Mr. Aniket Agrawal,** Who has director of **Grow High Engineers,** Nashik. He gives knowledge of skillful practical and idea of startup plan for civil engineers.

We know that houses are built for people, therefore, all parts of a house must be built to scale keeping its occupants or users in mind. Architectural graphic standards need to be considered for furniture sizes, appliances and standard spaces required for functional work requirements by people.

Let us first understand and analyze the space use of different rooms for specific functions in a house. We shall realize that in a house, all the rooms required by a family may be possible only if the plot area is big. This means that the house will require about 10 rooms. Since it is not possible for everyone to have a house with so many rooms, therefore, we have to manage with fewer rooms by combining and overlapping the use of spaces.

Glimpses of Workshop



Site Visit

Visit at RMC Plant

The site visit organized by civil department on the date of 15/04/2025 at 11.00am for all civil students. The visit at RMC plant Bambhori Jalgaon. A site in charge Mr. Yadav sir gives to us information about RMC plant.

GENERAL INFORMATION

A Ready Mix Concrete (RMC) plant is a facility where concrete is manufactured by precisely mixing ingredients like cement, aggregates, water, and additives in a controlled environment. This pre-mixed concrete is then delivered to

construction sites ready for immediate use, ensuring consistent quality and reducing on-site labor and waste.

PURPOSE OF VISIT

The primary purpose of visiting an RMC (Ready Mix Concrete) plant is to gain practical understanding and knowledge of the RMC production process, including the advantages of using RMC over site-mixed concrete, the steps involved in its preparation, and the different equipment used. It also allows for observing the quality control measures and the practical application of concrete technology in a real-world setting.

Facilities Visited: The plant had various sections such as stone crusher, aggregate storage, mixers, conveyors, etc. The students were shown all the sections and were given a detailed explanation about the process of producing RMC by the Quality Engineer of RMC Plant.

BENEFITS:

- Knowledge about the RMC working process in the field.
- How to deal with huge amount of freshly mixed concrete.
- Awareness among students about advantages of RMC.
- Improves students' knowledge about fastest process of mixing of concrete.
- Extra awareness about applications BMCT laboratory experiments.
- Knowledge about the site conditions where RMC plant proves useful.
- Improved knowledge about information of use of admixtures.
- RMC plant visit was beneficial to gain overall idea about elements of batching and mixing process

Glimpses of Site Visit

Online Workshop

The Department of civil Engineering has organized a workshop on **"AI IN CIVIL ENGINEERING YOUR NEW SITE PARTNER"** on **26/04/2025** (Saturday) between 11:30 AM to 12:30 PM, through the Google meet platform.

The lecture in this Workshop was given by **Mr. Harshal Patil,** who has **Cost Manager,** in Gleeds consulting Mumbai. He is giving knowledge of real life application of AI on construction site, AI future scope & industrial demand.

Artificial Intelligence (AI) is a branch of computer science focused on creating systems capable of performing tasks that typically require human intelligence. These tasks include learning, reasoning, problem-solving, perception, and language understanding. AI encompasses various subfields, such as machine learning, natural language processing, computer vision, and robotics, each contributing to the development of intelligent systems.

APPLICATIONS OF AI

AI technologies are integrated into various aspects of daily life and industry, including:

Virtual Assistants: Tools like Siri, Alexa, and Google Assistant use AI to understand and respond to user queries.

Recommendation Systems: Platforms like Netflix and Amazon use AI to suggest content and products based on user preferences.

Healthcare: AI aids in diagnostics, personalized treatment plans, and predictive analytics for patient care.

Autonomous Vehicles: Self-driving cars utilize AI to navigate and make real-time decisions on the road.

Finance: AI algorithms detect fraudulent activities and assist in investment decisions.

Real-life Application of AI on Construction Sites

- AI analyzes historical data, current progress, and resources to optimize schedules and identify delays before they happen.

- AI-powered cameras and drones monitor construction progress, compare it with plans, and detect safety hazards.
- AI generates multiple building design options based on constraints like budget, material use, and layout.

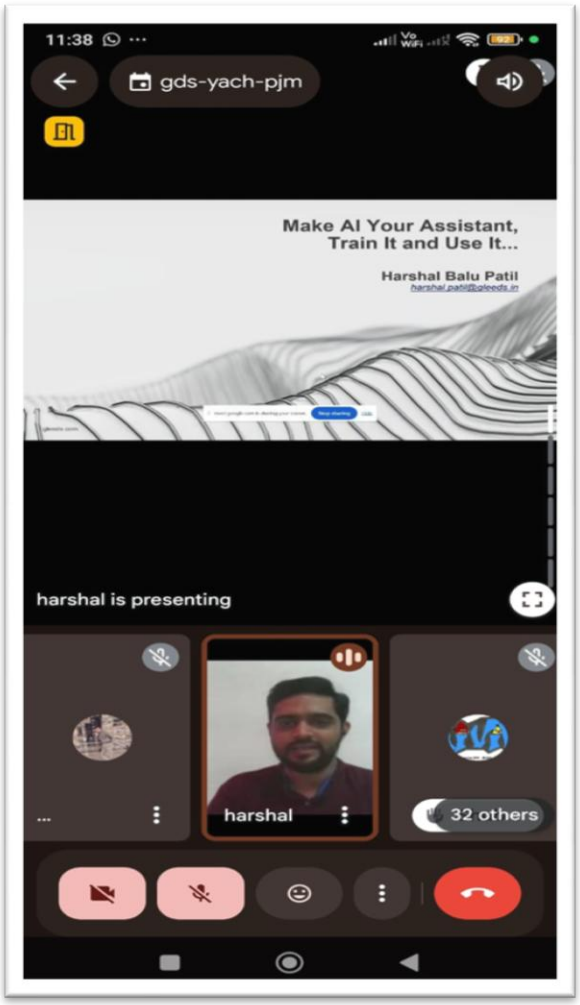
What AI Future scope & industry demand

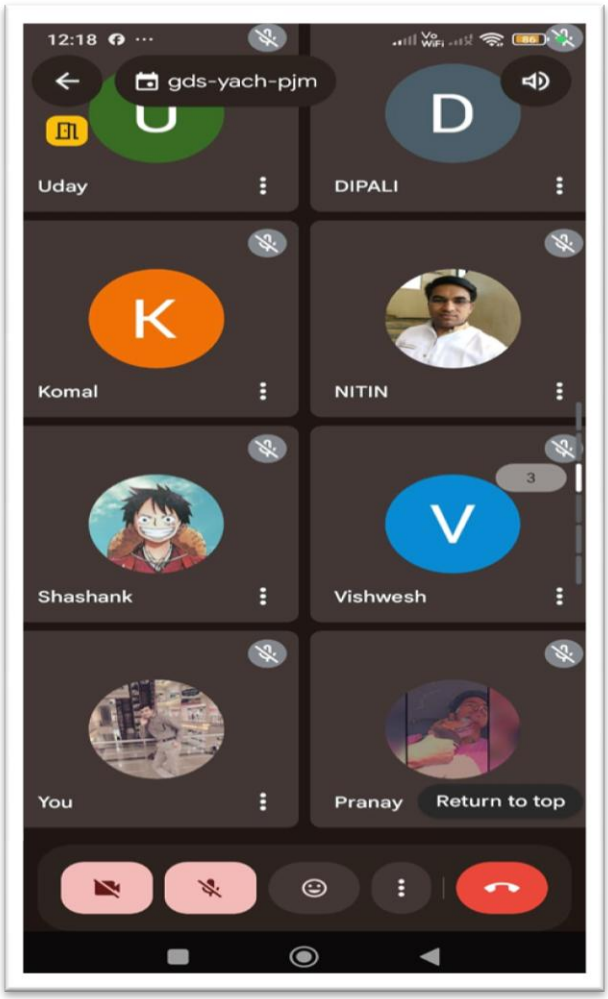
Building your own smart tools without coding is possible today using no-code platforms. These tools allow you to create apps, automations, d ashboards, and even AI workflows visually.

Create AI Prompting For Daily Civil Task

General-purpose AI prompting template tailored for daily civil tasks. These tasks can range from planning, inspection, reporting, to coordination in civil engineering or public works. You can adapt this prompt depending on the specific task and context.

Glimpses of Workshop





Guest Lecture

Advance Design Software of 3D Structure Building

The department of Civil Engineering of College of Engineering and Technology North Maharashtra Knowledge City, Jalgaon organized a lecture on **"Advance Design Software of 3D Structure Building"** on **06/05/2025** Er. Nikhil Sonawane, Brilliant Academy, Jalgaon was heartily welcomed by Prof. D. G. Pardeshi Head of the Civil Engineering Department.

The Special Person Er. Nikhil Sonawane, who was CEO of Brilliant Academy, Jalgaon, is delivered the lecture focused on Advance Design Software of 3D Structure Building

He discussed about construction field need for estimation software of 3D Structure Software Building.

Advanced 3D structural design software has transformed the architecture, engineering, and construction (AEC) industries by enabling professionals to analyze and visualize complex building structures with greater efficiency and precision.

- Advanced 3D structural design software has revolutionized the AEC industries.
- The software enables professionals to create.
- AEC stands for architecture, engineering, and construction.

Leading 3D Structural Design Software

Autodesk Revit:

Revit is a Building Information Modeling (BIM) software that facilitates the creation of detailed 3D architectural models. It supports parametric modeling, allowing for dynamic updates across the model when changes are made. Revit is widely used for architectural design, structural engineering, and construction.

Solid Work 3D Structure Creator:

This browser-based solution offers tools tailored for structural and frame design. It enables users to create structure members, choose profiles from standard libraries, and automatically generate cut lists for fabrication. Being cloud-based, it supports real-time collaboration among teams.

Sketch Up:

Sketch Up is known for its intuitive interface, making 3D modeling accessible to professionals and beginners alike. It offers robust tools for creating detailed architectural designs and supports real-time visualization, aiding in effective communication of design concepts.

STAAD Pro:

It is a structural analysis and design software that supports over 90 international design codes. It offers various analysis methods, including static, dynamic, and nonlinear analyses, making it suitable for designing buildings, bridges, towers, and more.

Sky Civ Structural 3D:

Sky Civ offers a cloud-based platform for modeling, analyzing, and designing structures made of steel, timber, concrete, and more. Its accessibility via web browsers allows engineers to work from anywhere, facilitating flexibility and collaboration.

Glimpses of Guest Lecture

Add on Course

Building Information Modeling

The department of Civil Engineering of College of Engineering and Technology North Maharashtra Knowledge City, Jalgaon organized Add on Course Program on **"Building Information Modeling"** on 08/05/2025 To 10/05/2025,

The Guest speaker **Mr. Chetan Patil** was CEO of Brilliance Academy. Jalgaon heartily Felicitate by our Head of Civil Department D.G.Pardeshi & Mr. Kalpesh Marathe was Felicitate by Prof. P. R. Wani

Mr. Chetan Patil delivered the lecture focused on Latest Software Used in Construction Industry.

- **Course Objective:**

1. Course aims at making students to understand the Building Information Modeling software
2. How to use BIM software in civil engineering construction work

- **Course Outcomes:**

Students should able to make model in BIM software

During Course:-

- **What is BIM?**

Building Information Modeling (BIM) is an intelligent, 3D model-based process that provides architecture, engineering, and construction (AEC) professionals the tools and insights to efficiently plan, design, construct, and manage buildings and infrastructure.

- **Benefits of BIM**

Enhanced Collaboration: All stakeholders work on a unified platform.

Improved Visualization: 3D models help in better understanding and decision-making.

Reduced Costs & Errors: Early clash detection and data integration lower the chances of rework.

Efficient Project Management: Supports better planning, scheduling, and resource allocation.

Lifecycle Management: From design to demolition, supports efficient facility management.

- **Common BIM Software Tools**

Software	Primary Use
Autodesk Revit	Architectural, structural, and MEP modeling.
Navisworks	Clash detection and project review.
ArchiCAD	Architectural modeling and design.
Bentley Systems	Infrastructure and civil works BIM.
Tekla Structures	Structural detailing and fabrication.

As per the feedback received from the participants we conclude that, it was a very good learning experience, the lecture helped them in understanding the recent software used in construction industry.

Glimpses of Add on Course

BIM Model