



G.K. Gujar Memorial Charitable Trust's
Dr. Ashok Gujar Technical Institute's,
Dr. Daulatrao Aher College of Engineering, Karad.
Vidyanagar Ext. Banawadi, Tal. Karad 415124, Dist. Satara, Maharashtra INDIA

Program Name: STTP

Date: 27/01/2025

DACOE/PRGM/COF-FRM- 02

Department: Department of Civil Engineering

COF-FRM-02- Rev. No: 0

Activity Report

IIC Activity

IIC Year 6.0 (Quarter-II)

Report on Self Driven Activity STTP on 'Emerging Trends in Civil Engineering'.

Program/Activity Name: One Week STTP on Emerging Trends in Civil Engineering under Lead College Scheme of Shivaji University, Kolhapur (in hybrid mode)

Day and Date: Monday to Friday , 27/01/2025 to 31/01/2025

Duration : One Week

Academic Year: 2024-25

Program type: IIC Calender Activity (Conduct a Session on Achieving Problem Solution Fit and Product Market Fit)

Name and details of speaker: Er. Rajendra Pawar , Ex. Secretary, CADA, Govt. of Maharashtra
Er. Ravi Ranade, Chairman and MD, CDC, Pune, and 4 others

Objective of activity: To foster emerging trends in civil engineering to creative solutions, ideas, and cutting-edge technologies in the field of civil engineering.

Benefit in terms of learning/skill/knowledge obtained: Participants learned about integrate advanced technologies currently used in civil engineering practices.

Beneficiary: Students , Faculty, industry personnel, etc.

Outcome/Remark: Participants gain knowledge on techniques for rehabilitating and retrofitting damaged or aging structures. principles of Structural Dynamics and how they influence the design of resilient structures, Ferrocete Technology and its application in strengthening and creating innovative structures , integrate advanced technologies in water management, road construction, and material selection into their civil engineering practices

Brief of the event:

1. Day One (Session One and Two)

The Inauguration session is on "Structural Assessment & Non-Destructive Testing (NDT) Methods" held by Ravi Ranade Sir. He highlighted the importance of evaluating the integrity of structures without causing any damage. NDT techniques like ultrasonic testing, core testing and magnetic particle inspection are essential for detecting internal flaws or wear, ensuring safety, and extending the lifespan of critical infrastructures. These methods are widely applied in the construction, aerospace, and energy sectors, offering solutions to real-life challenges such as detecting cracks in bridges or corrosion in pipelines without compromising their functionality.

2. Day Two (Session One and Two)

On Second Day, Er. Manish Kasar Sir's first session is on "Advance Construction Materials". He explored innovative materials that enhance the durability and sustainability of structures. From high-performance concrete to self-healing materials, these advancements are pivotal in addressing real-life challenges like minimizing maintenance costs and ensuring longevity in structures exposed to harsh environmental conditions. The



application of such materials is essential for the construction of resilient buildings, highways, and bridges, offering solutions for more efficient and cost-effective construction practices.

The Second session is on "Advance Technologies in Water Management", led by Rajendra Pawar Sir. He explained cutting-edge technologies for optimizing water usage and improving water distribution systems. These advancements, such as smart irrigation systems and real-time water quality monitoring, aim to tackle global water scarcity and wastage. Real-life applications include improving agricultural productivity, managing urban water supplies efficiently, and ensuring sustainable water practices in industrial sectors, contributing to environmental conservation and reduced resource depletion.

3. Day Three (Session One and Two)

On the Third Day's first session, Deepak Modak Sir's presentation on the "Lake Tapping at Koyana Dam Project" focused on sustainable water resource management by tapping into existing water reservoirs for irrigation and drinking purposes. This method addresses challenges like water scarcity in drought-prone regions and the need for efficient water storage systems. The Koyana Dam project, in particular, plays a vital role in meeting the water demands of nearby areas, offering valuable lessons in optimizing water storage and distribution for large-scale irrigation and hydropower generation.

Second session is on "Ferrocement Technology" held by Rajendra Pawar Sir. He introduced the concept of ferrocement reinforced concrete material that offers exceptional strength-to-weight ratios. Ferrocement is widely used in constructing thin, durable, and cost-effective structures, such as boats, tanks, and low-cost housing. The technology helps address the challenges of material scarcity and high construction costs, providing a practical solution for developing countries with limited resources, especially in rural and flood-prone areas.

4. Day Four (Session One and Two)

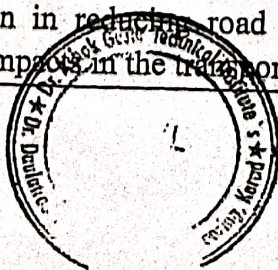
First session of fourth day is on "Construction Aspects of Samruddhi Mahamarg" held by Vishwanath Satpute Sir. He discussed the complexities involved in the construction of the expressway, focusing on design, materials, and logistics. This project aims to improve connectivity between urban and rural Maharashtra, reducing travel time and boosting economic activity. The real-life challenge of maintaining high standards in construction while ensuring minimal environmental impact was addressed, with Samruddhi Mahamarg serving as an example of modern infrastructure development that connects diverse regions and improves transportation efficiency.

Second session is on "Earthquake Resisting Structures" by Dr. Pranesh Murnali Sir. He provided insights into designing buildings that can withstand seismic activity, ensuring public safety in earthquake-prone regions. These structures use specialized materials and designs to absorb and dissipate energy during earthquakes. The session highlighted real-life applications in countries like Japan and California, where such technology is essential for mitigating the damage caused by frequent earthquakes, safeguarding lives, and maintaining the integrity of critical infrastructure.

5. Day Five (Session One and Two)

Fifth day's first session is on "Damage Assessment & Rehabilitation of Structures" held by Chetan Raikar Sir. He focused on methods used to evaluate and restore damaged buildings, especially those affected by natural disasters or aging. Techniques like structural health monitoring and retrofitting were discussed as essential tools in prolonging the lifespan of existing structures. This knowledge is crucial for tackling the challenges of aging infrastructure in urban areas and ensuring the safety of buildings, especially in seismic and flood-prone zones, while minimizing costs and time involved in repairs.

Valedictory session is on "Advances in Road Construction" Sambhaji Mane Sir. He explained different innovative techniques for building roads with improved durability and cost-effectiveness. Topics such as the use of recycled materials, advanced asphalt technologies, and automated construction machinery were discussed. The real-life application of these methods can be seen in reducing road maintenance costs, enhancing the lifespan of highways, and minimizing environmental impacts in the transportation sector, offering solutions for efficient and



sustainable road infrastructure development.

6. Question Answer Session

The question and answer session, both online and offline, provided an engaging platform for the audience to interact with the resource persons and gain further insights into the topics discussed. Attendees asked practical questions, seeking clarification on real-life applications of the concepts, challenges faced during implementation, and the potential for future advancements. The resource persons shared valuable experiences and solutions, addressing concerns related to industry trends, technological limitations, and best practices. This interactive session not only enhanced the learning experience but also fostered a deeper understanding of complex topics, offering the audience the opportunity to bridge the gap between theory and real-world challenges.

7. Concluding Remark

In the concluding remarks, Dr. M. B. Kumthekar emphasized the significance of continuous learning and adaptation in the rapidly evolving fields of construction, water management, and structural engineering. He highlighted the importance of incorporating advanced technologies, sustainable practices, and innovative materials in addressing real-world challenges such as resource management, infrastructure durability, and disaster resilience. Dr. Kumthekar encouraged the audience to stay engaged in practical applications, collaborate across disciplines, and actively participate in further research to contribute to the growth and development of the industry. He expressed his gratitude to the resource persons and attendees for their valuable contributions, reinforcing the collective effort needed to build a sustainable future.

Link of Event: <https://www.youtube.com/@agtisdacoekarad2875/streams>

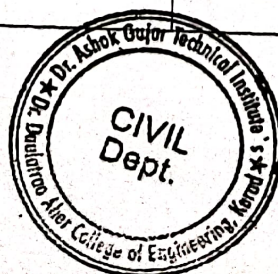
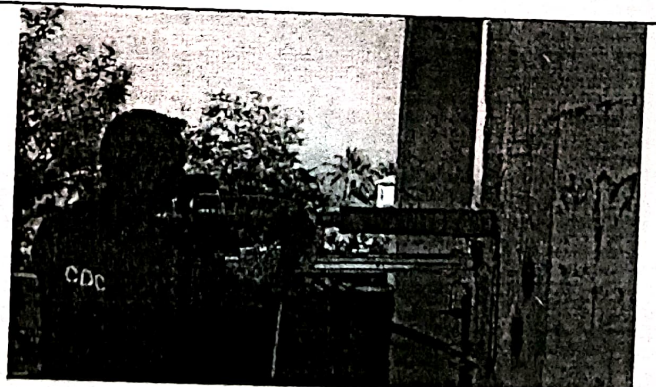
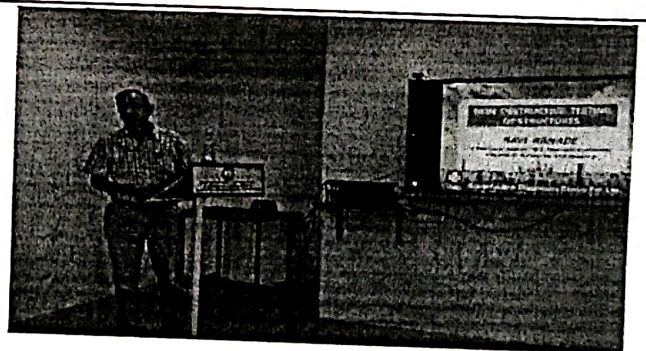
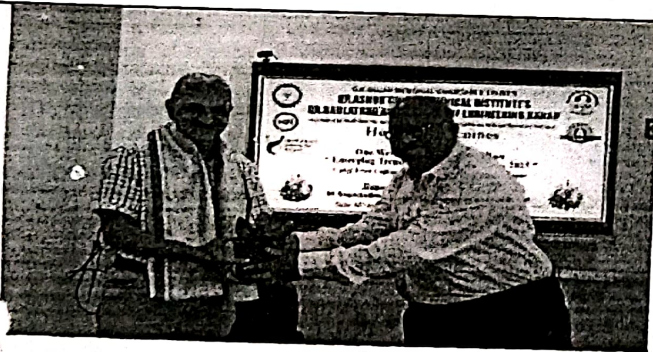
Attendance Summary:

Number of Participants: 80

Number of students: 50

Number of faculties/ industry personnel: 30

Photographs:



PRESENTATION ON
Details of Lake Tapping Activity

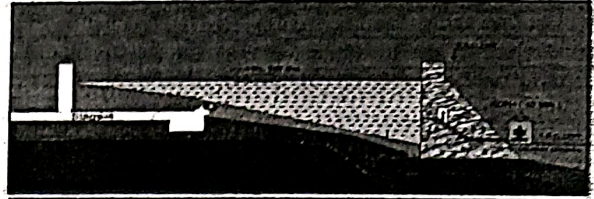
BY

D. N. Modak

Chairman Dam Safety Review Panel, World Bank, Pune
Region

Member, Dam Safety Panel Goa Govt.
Prof Emeritus A.P.C.E
Former Chief Engineer
Hydro Electric Projects, Maharashtra

**Construction of Stage-4
Need of lake Tapping Technique & Stage-4(B)**



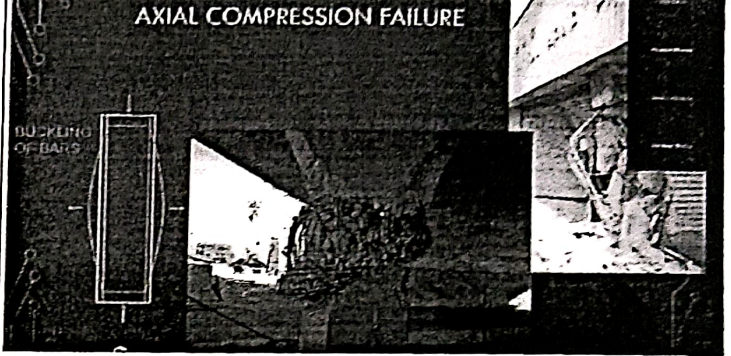
As Dam and reservoir is already there before Stage-4 Powerhouse the Conventional Intake like Stage-3&2 was not possible.

**PROJECT BRIEF OF HHBT MAHARASHTRA
SAMRUDDHI MAHAMARG**

- Project Features:**
 - 370 km S&B & cross connected Expressway
 - Key - 12350 Km
 - Design Speed - 120 Kmph
 - Permitted: Common Passenger
 - Total Structure - 1512 Km
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 - 370 km S&B & cross connected Expressway
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- Project Details:**
 - 370 km S&B & cross connected Expressway
 - Key - 12350 Km
 - Design Speed - 120 Kmph
 - Permitted: Common Passenger
 - Total Structure - 1512 Km



AXIAL COMPRESSION FAILURE

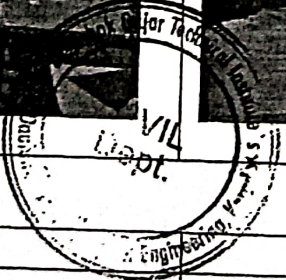
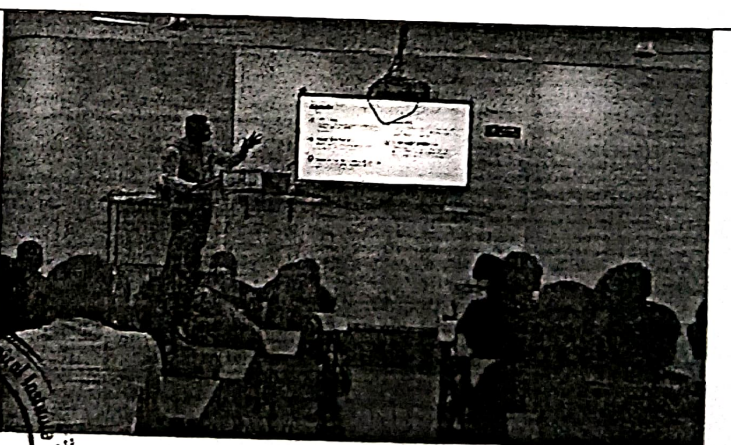
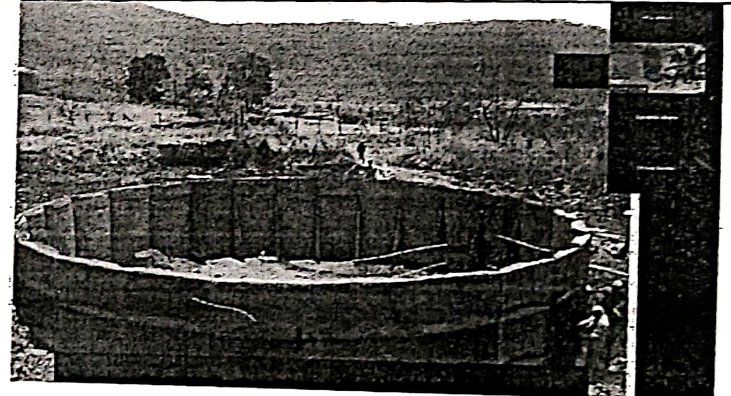


**APPLICATIONS
OF
FERROCEMENT TECHNOLOGY**

by

Er. Rajendra Pawar

Former Secretary
Water Resources Department



Program Coordinator

Kumbhar V.P

HoD

Handwritten signature of the HoD.



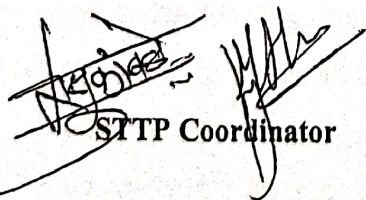
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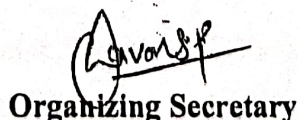
Date: 06/03/2025

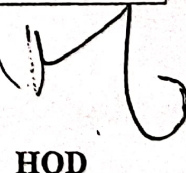
STTP on 'Emerging Trends in Civil Engineering' under Lead College
Scheme of Shivaji University

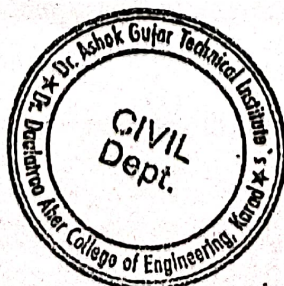
Balance Sheet

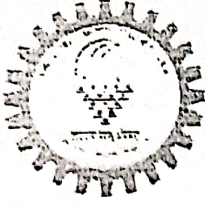
Credit			Debit		
Sr. No.	Description	Total Amount	Sr. No.	Description	Total Amount
1.	Entry Fee	23500/-	1	Honorarium	49,000/-
			2	Zoom on-line Subscription (monthly)	1730/-
			3	Building Material (for hand on)	1325/-
2.	Lead College Contribution	40,000/-	4	Stationary (Pen, Folders, etc)	2400/-
			5	Certificates and Banners	3050/-
			6	Breakfast and tea (resource person, authorities, etc)	1451/-
			7	Food and belongings (Lunch for 1st day and Last day)	16195/-
3.	CESA Contribution	22100/-	8	Refreshments for student(Breakfast and tea)	8750/-
			9	Water jar	280/-
			10	Inauguration and Felicitation	1410/-
Total		85600/-	Total		85591/-
Balance= Credit – Debit = 85600 – 85591 = 09/- (Consider as a Nil)					


STTP Coordinator


Organizing Secretary


HOD





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Vidyanagar Ext. Banawadi, Tal. Karad 415124, Dist. Satara,
Maharashtra INDIA

DEPARTMENT OF CIVIL ENGINEERING

Proposal for STTP

Date: 15/01/2025

To,
The Principal,
DACOE, Karad.

Subject: Permission to organize One Week STTP under Lead College Scheme of Chh. Shivaji University, Kolhapur.

Respected sir,

We the department of Civil engineering are interested in organizing one week Short Term Training Program on "EMERGING TRENDS IN CIVIL ENGINEERING" Under Lead College Scheme of Chh. Shivaji University, Kolhapur during 27th to 31st January 2025. The training is arranged for the faculty, research scholars and the students of Civil engineering. Kindly consider our proposal and permit us for the same.

The details of the STTP are as follows:

Title: Emerging Trends in Civil Engineering.

Tentative dates: 27st to 31st January 2025.

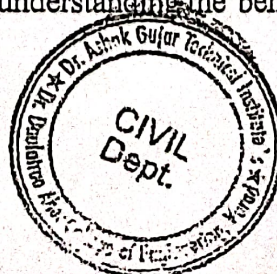
Time: 10:00 am to 5:00 pm.

Venue: Department of Civil Engineering

Expected entries: 40 Nos.

Objective: The STTP aims at enhancing the following skills in civil engineering field

- To provide a comprehensive understanding of rehabilitation and retrofitting techniques for enhancing existing structures.
- To introduce the latest Non-Destructive Testing (NDT) methods for assessing the health and safety of structures.
- To emphasize disaster risk management strategies for ensuring resilient infrastructure in areas prone to natural disasters.
- To explore the role of Structural Dynamics in understanding the behavior of structures under dynamic loads.



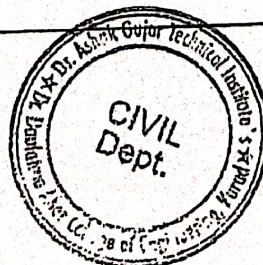
- To discuss the application of Ferrocure Technology in creating durable, sustainable, and cost-effective structures.
- To highlight emerging trends in water management, road development, and the use of advanced construction materials in modern civil engineering projects.

Outcomes:

- Participants will gain knowledge on techniques for rehabilitating and retrofitting damaged or aging structures.
- Participants will be able to apply various NDT methods for accurate evaluation of structural conditions without causing damage.
- Participants will develop strategies for disaster risk management and apply them to design resilient infrastructure.
- Participants will understand the principles of Structural Dynamics and how they influence the design of resilient structures.
- Participants will acquire insights into Ferrocure Technology and its application in strengthening and creating innovative structures.
- Participants will be able to integrate advanced technologies in water management, road construction, and material selection into their civil engineering practices.

Course content:

Day	Topic	Duration (hours)
	Inauguration	1
01	Non-Destructive Testing (NDT) methods for assessing the health and safety of structures	5
	Techniques for rehabilitating and retrofitting damaged or aging structures.	3
02	Principles of Structural Dynamics and how they influence the design of resilient structures.	3
	Insights into Ferrocure Technology and its application in strengthening and creating innovative structures	3
03	Develop strategies for disaster risk management and apply them to design resilient infrastructure.	3
	Integrate advanced technologies in water management	3
04	Integrate advanced technologies in road construction	3
	Integrate advanced technologies in material selection into their civil engineering practices	3
05	Valedictory	2



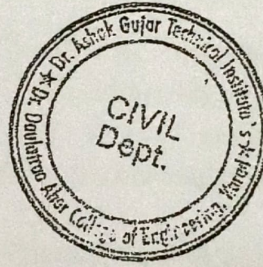
Details of Expenditure

Sr. No.	Activity	Amount (Rs.)
1	Brochure with envelope, Bouquet, Banner, Felicitation of guest/experts, certificate printing, stationary	5,000
2	Honorarium to experts	55,000
3	Breakfast, Tea and Lunch (for 40 persons)	20,000
4	Miscellaneous	5,000
	Total proposed expenditure(Rs.)	85,000
	Total proposed expenditure (Rs. In words): Eighty Five thousand only	

STTP Coordinator

Organizing Secretary

Head of Department



By 40000/-
Sanctioned from
Head College Section