Nagur Yuwak Shikshan Sanstha's

Yeshwantrao Chavan College of Engineering

An Autonomous Institution Affiliated to
Rashtrasant Tukadoji Maharaj Nagpur University,
Nagpur

Department of Civil Engineering

S. P. A. R. S. H.

Systematic Planning Analysis Research Sustainable Housing

2025

SPARSH 2025

DEPARTMENT OF CIVIL ENGINEERING

"Where Technology Promotes Sustainability"

मार्गदर्शक

Hon'ble Shri Dattaji Meghe
Chairman
Nagar Yuwak Shikshan Sanstha

Hon'ble Shri Raviji Meghe
Secretary
Nagar Yuwak Shikshan Sanstha

Hon'ble Shri Sameerji Meghe
Treasurer
Nagar Yuwak Shikshan Sanstha

स्पर्श

स्पर्श , सुंदर सृष्टीचा
कळीला आकर्षक फूल बनविण्याचा

स्पर्श , सूर्य किरणांचा
अंधारात प्रकाश पसरविण्याचा

स्पर्श , काळ्या मातीचा
बीजाला झाड बनविण्याचा

स्पर्श , जादुई शब्दांचा
मनोरथ पूर्ण करण्याचा

स्पर्श , विस्तृत ज्ञानाचा
सागरात मिसळून जाण्याचा

स्पर्श , अनोख्या स्वप्नांचा
वास्तवाला सजवण्याचा

स्पर्श , आईच्या मायेचा
मनाला शांत करण्याचा

अश्याच सुंदर, जादुई, अनोख्या स्पर्शाची ओळख करून देण्यास
घेऊन आलो आहे आमची ही नवीन प्रस्तुती स्पर्श 2025

त्रिवेणी सुधाकर नागमोती

Department of Civil Engineering, YCCE, Nagpur

VISION

To become most sought after destination for learning and research in Civil Engineering.

MISSION

To prepare Civil Engineering Professionals by practicing analytical, design tools, field learning and live industrial projects in conducive environment.

UNDER GRADUATE

Program Educational Objectives:

i) To prepare students to succeed in employment, profession and/or to purse post graduation and research in civil engineering discipline in particular and allied engineering disciplines in general,

ii) To provide students with a solid foundation in mathematical, scientific and engineering fundamentals required to formulate, analyse and solve civil engineering related problems.

iii) To prepare the students to acquire the knowledge in breadth in order solve mathematical problems related to analysis and design of various systems pertaining to different fields of Civil Engineering in order to utilize their skills to perform location surveying, cast estimates and activities related to Civil Engineering projects, using conventional and modern engineering tools

iv) To inculcate ethical practices and to establish understanding of professionalism, safety, sustainability, their duties and contribution to the society.

v) To provide students with academic environment that makes them aware of excellence and to enable them to understand the significance of life-long learning in global perspective.

Program Outcomes:

1. Engineering Knowledge: Apply knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems.

2. Problem Analysis: Identify, formulate, research literature and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences

3. Design Development of Solutions: Design solutions for complex engineering problems and design system components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal and environmental Consideration

4. Conduct Investigations of complex problems using research based knowledge and research methods including design of experiments, analysis and interpretation of data and synthesis of information to provide valid conclusions.

5. Modern Tool Usage: Create, select and apply appropriate techniques, resources and modern engineering and IT tools including prediction and modelling to complex engineering activities with an under-standing of the limitations.

6. The Engineer and Society. Apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional engineering practice.

7. Environment and Sustainability Understand the impact of professional engineering solutions in societal and environmental contexts and demonstrate knowledge of and need for sustainable development.

8. Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice. 9. Individual and Team Work: Function effectively as an individual, and as a member or leader in diverse teams and in multi disciplinary settings.

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.

11. Project Management and Finance: Demonstrate knowledge and understanding of 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.

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:

i) Execute analysis of various structures including hydraulic and environmental Structures and carry out their design:

ii) Examine geotechnical and other parameters for design of foundations, earthen dam, tunnels, bridges and roads.

iii) Execute location survey and quantity survey for cost estimation of all types of structures, including interpretation of civil engineering drawing.

PG ENVIRONMENTAL

Programme Educational Objectives:

i) To provide fundamental knowledge of Civil engineering in general and Environmental Engineering in specific for better understanding of various environmental systems.
ii) To provide understanding of and ability to apply environmental engineering knowledge and approaches to generate effective engineering solutions.
iii) To provide academic environment to work independently and in a team to initiate research in demanding areas and develop a habit of upgrading knowledge of advancements in technologies for sustainable development in conjunction with contemporary issues.
iv) To inculcate professional and ethical attitude, effective communication skills to become successful professional and understand responsibility towards well being of society.

Program Outcomes:

Pol: An ability to carry out experimental investigation as well as use of software tools for conducting independently a research work
Po2: An ability to design various units and systems for treatments of water and wastewater, supply of water as well as
collection of wastewater
PO3: An ability to write and present a substantial technical report/document as well as demonstrate communication and presentation skill.
Po4: An ability to understand impact of pollutants on environmental and ways means to control the pollution of environmental including using management tools ones.

PG STRUCTURAL

Programme Educational Objectives:

i) To provide fundamental knowledge of Civil engineering in general and Structural Engineering in specific for better understanding of various Structural systems.
ii) To provide understanding of and ability to apply Structural engineering knowledge and approaches to generate effective engineering solutions. iii) To provide academic environment to work independently and in a team initiate research in demanding areas and develop
a habit of upgrading knowledge of advancements in technologies for sustainable development in conjunction with
contemporary issues.
iv) To inculcate professional and ethical attitude, effective communication skills to become successful professional and understand responsibility towards well being of society.

Program Outcomes:

Po1: An ability to independently carry out research /investigation and development work to solve practical problems in Structural Engineering
PO2: An ability to write and present a substantial technical report/documents in the area of structural engineering
Po3: An ability demonstrate advances in structural engineering
PO4: An ability to learn and apply advanced engineering techniques and software tools
PQ5: An ability to acquire professional, ethical and responsible attitude towards development of the profession and society.
Po6: An ability to adapt lifelong learning to upgrade knowledge and competence continuously.

Dr. U.P. WAGHE
PRINCIPAL, YCCE

Dear Students

Congratulations to all the editorial team of Department of Civil Engineering for bringing out the yearly magazine SPARSH of your department. The underdetermination and enthusiasm in releasing this issue is a milestone of us at YCCE. "SPARSH", represents the talent and aptitude of our students and faculty members who have assembled a spectrum of articles on technology and literature in a very short span of time involving technology direct our lives For students, while acquiring knowledge and proficiency in their chosen field are the stepping stones to a successful career, professionalism is equally important

Activities such as this magazine and the other curricular activities are directed towards inculcating a sense of responsibility and creating sensitivity and versatile professions of the future. Under the experienced management of NYSS YCCE has a dedicated and qualified faculty and excellent infrastructure, in addition to a committed vision, young engineering aspirants for a successful future. Students have boundless future opportunities to take the advantage but with perseverance.

So, my dear students along with academics, avail of the various opportunities, participa whole heartedly in every project that comes in your way. Utilize your talent, polishkills and you will excel.

Your success will be recognition and reputation of YCCE

Dr. D.R. RAUT

CONTROLLER OF EXAMINATION, YCCE

Dear friends, I noticed that many people think they don't have support. Is it really true though? Just give it a thought.As long as I am on the earth, my weight is always transferred to the earth. It doesn't matter whether I am on foot, in a vehicle or in an aeroplane. Isn't that a great support by the earth? Further, this earth gives me vegetables, fruits, and grains for energy in every moment of my life. Does this earth put any condition for this? It's simply unconditional love and support from the earth.I need water for life. This universe is providing it without any discrimination. Corporations may charge for water but the universe does not! Can't we consider this as a support from the universe? What a great, wonderful mechanism this universe has provided in my body to release the power of the Sun stored in the food and convert it to maintain the required heat inside. I am using the mitochondria from my very own body as a powerhouse for myself. Amazing recycling of the power of the universe, 24x7 inside the body. Is this not a great example of support ? Further I need oxygen for using all this energy within our body and being alive! O2 found in nature, everywhere without a cost! What is this universe doing for me? You will notice that, it is literally running after me 24x7 with a ready abundance of oxygen. Whatever I do, right or wrong, this universe is providing oxygen without any condition, without any discrimination by colour, cast, sex, education, country, financial condition, language etc. No matter whether I am sitting, or standing, or running or traveling in a vehicle, air is omnipresent. The doctor may charge for it, but the universe will never.

A great saint Tukoba, well said as,

"जेथे जातो तेथे तू माझा सांगाती,

चालविशी हाती धरोनीया".

What is my role for my life? The only thing I should do is, I need to focus on myself. I need to take proper food and water, maintain my sleep cycle, enjoy and absorb the Sun rays, and breathe in the abundantly available air. Further, I need to optimise my emotions. Mind well, happiness is the catalyst for every energy generating chemical reaction inside us and simultaneously sorrows from the past memories, fears from future imaginations, worry, anxiety act exactly opposite to spoil this energy generation process. Anger from the past consumes most of the generated energy unnecessarily many times. To be more and more energetic, enthusiastic, creative at every moment, take a break, just sit calm and take a deep breath, focus on every cell (घट) of your body from the tip of your hair to nail.of your toe containing mytochondria. Be aware of the vibrations there. Witness them consciously. A well known saint, whose name is associated with our RTM Nagpur University, Rashtrasant Tukdoji Maharaj well said as,

"अपने आतम के चिंतन मे हरदम जागृत रहना है,

ओहं सोहंम श्वास से अपनी अंतर्दृष्टी निरखना है".

Relax every muscle, every joint, every cell of your body. Release the emotions.

Dissolve the anger and sorrow by forgiving yourself and others, just like restarting a troubled device. Dissolve the fear by creating the possibilities and create a new space for commitment to act upon it. Accept yourself as you are and Love yourself. Always be in the present moment.

Observe the "स्पर्श" (touch) of the air at the nostrils, respiratory track, travel in and out with each breath. I am sure, "स्पर्श" (touch) will heal your life. From 1990, YCCE has given many opportunities to serve the purpose of life. Thank you YCCE for giving me a loving, caring, supporting, committed community around. Thank you universe for your lovely support at every moment of my presence in your space. Thank you management, principal, hod, colleague and everyone else who I happened to cross my paths with, including my beloved students from every department for being with me during this journey.

Dr. A.V. PATIL

DEAN,
ACADEMIC MATTERS, YCCE

Nurturing creativity and inspiring innovation are two of the key elements of a successful education and a college magazine is the perfect amalgantation of both. It Harnesses the creative energies of the academic community, and distils the essence of their inspired imagination in the most brilliant way possible. Hence I am delighted to know that the annual magazine 2024-25 SPARSH is ready for publication

I take this opportunity to congratulate students of Department of Civil Engineering for their timeless efforts and for their successful completion of this tedious yet daunting task of putting together the myriad of thoughts and dreams of our students into this brilliantly crafted piece. I also express my appreciation to all the authors of the articles in this magazine It is their willingness to share knowledge, concerns and special insights with fellow beings that has made this magazine possible

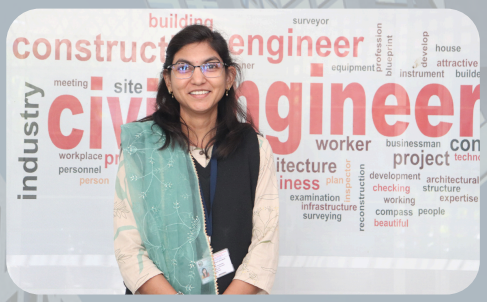
Dr. S.P. RAUT

HOD, CIVIL ENGINEERING DEPARTMENT,
YCCE

I am incredibly proud of the Civil Engineering students working tirelessly on the publication of our departmental magazine, "SPARSH." This magazine is more than just a publication; it's a cornerstone of our department's growth, providing a vital platform for students to showcase their creativity and innovative ideas.

"SPARSH" is a crucial space for young engineers to share their perspectives on issues vital to our nation's progress. It empowers students to express themselves articulately while also providing valuable training in effective time management and creative pursuits.

Furthermore, the magazine fosters a strong sense of community within our department. It instills pride in our institution's achievements and encourages students to engage in meaningful activities. I extend my heartfelt congratulations to the dedicated editorial board of "SPARSH" for their unwavering commitment to producing an exceptional issue. I am confident that this magazine will serve as a cherished keepsake, capturing the memories and milestones of our department. I wish the editorial board and all Civil Engineering students the very best in their future endeavors.



Dr. Ms. Charuta S.Waghmare

ASSISTANT HOD, CIVIL ENGINEERING DEPARTMENT, YCCE

Kudos.... team "Sparsh".....

It is with great pride and joy that I share my thoughts for this edition of our department magazine, Sparsh. The name itself, resonates deeply with the essence of what this magazine represents—a connection between ideas, people, and possibilities.

Sparsh serves as a platform to celebrate the incredible talent, creativity, and achievements of our vibrant department. It is a space where minds meet, where thoughts find expression, and where innovation takes shape. This edition reflects not only the academic and professional accomplishments of our students and faculty but also their artistic flair and human spirit.

I extend my heartfelt appreciation to the editorial team and contributors for their unwavering dedication in bringing Sparsh to life. Your hard work ensures that our department's vibrancy and dynamism are showcased with pride.

Together, let us continue to uphold the legacy of excellence that our department is known for.

Dr. KHALID ANSARI

STUDENT ACTIVITY INCHARGE, CIVIL ENGINEERING DEPARTMENT, YCCE

I am delighted to unveil the inaugural edition of "SPARSH." Since its inception, the Department of Civil Engineering has consistently excelled, diligently fulfilling its responsibilities while simultaneously cultivating new competencies. Our unwavering commitment lies in fostering a holistic learning environment that seamlessly integrates academics, extracurricular pursuits, and practical experience. We strive to cultivate an atmosphere conducive to skill development, individual growth, and overall departmental excellence.

I extend my heartfelt appreciation and congratulations to the entire SPARSH 2025 team for their tireless efforts in showcasing the remarkable achievements of our students, faculty, alumni, and stakeholders within this departmental magazine.

I would like to express my sincere gratitude to the Principal, Head of the Department, and the esteemed Management for their unwavering support. I wish them all the very best in their endeavors.

PROF. PAWAN K. HINGE

Magazine Incharge

Dear Readers, It gives us immense pleasure to present the latest edition of the annual Civil Engineering departmental magazine, S.P.A.R.S.H, for the academic session 2024-25. The theme of this year's edition, "Smart Materials and Structures: Shape-Memory Alloys, Polymers, and Hybrid Composites" highlights the pressing need for the civil engineering community to embrace transformative practices that prioritize resilience and sustainability. In a time characterized by rapid technological progress, environmental challenges, and global uncertainties, civil engineers must develop solutions that stand the test of time.

This theme reflects our shared commitment to driving innovation that addresses current societal demands while contributing to a sustainable future. By focusing on the synergy between resilience and sustainability, this edition aims to inspire the next generation of civil engineers to take a leading role in creating a more enduring and environmentally responsible world. We are deeply grateful to our esteemed Principal, Dr. U.P. Waghe, and Head of the Department, Dr. S.P. Raut, for their unwavering support and encouragement. We also extend our sincere appreciation to the teaching and non-teaching staff for their invaluable contributions.

A special note of gratitude goes to the incredible magazine committee, whose dedication and teamwork have been the backbone of *S.P.A.R.S.H*. Each member has played a vital role in transforming this magazine into a platform that exceeds expectations. *SPARSH* is a testament to our collective efforts to advance the department and its students. We hope this edition, centered around the "Smart Materials and Structures: Shape-Memory Alloys, Polymers, and Hybrid Composites" resonates with you and inspires continued support. Your encouragement motivates us to strive for excellence. Thank you for joining us in celebrating this milestone in our journey.

Message From Team
S.P.A.R.S.H. 2025

Greetings Readers,Welcome to the Eight Edition of S.P.A.R.S.H, a journey into the captivating realm of "Smart Materials and Structures: Shape-Memory Alloys, Polymers, and Hybrid Composites." This edition marks a significant milestone, culminating months of dedicated effort, creativity, and collaboration.Since the inauguration of our poster magazine back in August, we have embarked on a vibrant and enriching journey. Our department has been a hive of activity, buzzing with the celebration of diverse festivals, the organization of engaging events, and the constant exploration of new ideas. As part of our endeavor to foster a stimulating and creative environment, we adopted a unique approach to board decoration, dedicating each month to a different theme, transforming our surroundings into a kaleidoscope of colors, ideas, and inspirations.

This Eight Edition of S.P.A.R.S.H is a direct reflection of this vibrant spirit and the unwavering dedication of our team members. From students and faculty to students from differnt departments of our college, each individual has contributed significantly to this endeavor, sharing their expertise and creative insights across a spectrum of domains. Their tireless efforts have resulted in a collection of articles that delve deep into the fascinating world of smart materials, exploring their unique properties and transformative applications.Beyond the technical discourse, this edition invites you to immerse yourselves in the realm of artistic expression.

Our Photography and Sketch sections offer a unique perspective, showcasing the beauty and creativity that permeates our department and the broader field of civil engineering.We would like to sincerely thank our ex-heads Aaryan sir and Aditya sir for their unwavering support while working on the magazine. We believe that this Eight Edition of S.P.A.R.S.H will serve as a valuable resource for students, faculty, researchers, and professionals alike. It is a testament to the power of collaboration, the spirit of innovation, and the unwavering pursuit of knowledge that defines our department. We hope that this edition will inspire new ideas, foster a deeper understanding of cutting-edge materials science, and propel us towards a future where smart materials revolutionize the built environment.

Happy Reading!

In Loving Memory of

Dr. Hemant Thakre

It is with profound sadness that we mourn the passing of Dr. Hemant Thakre, whose departure leaves an irreplaceable void in our lives. Dr. Thakre was not only a remarkable individual but also a beacon of knowledge, kindness, and compassion. His unwavering dedication, wisdom, and gentle demeanor touched countless lives and will remain an inspiration to all who had the privilege of knowing him.

As we grieve this immense loss, we extend our heartfelt condolences. Let us honor his memory by continuing to uphold the values he so strongly believed in and shared with us. May his soul rest in eternal peace.

Forever in our thoughts and prayers.

MEET OUR TEAM

PROF. PAWAN HINGE
MAGAZINE INCHARGE

ATHARVA DESHMUKH
MAGAZINE HEAD

KHUSHI BHUJADE
MAGAZINE CO-HEAD

TANUJA HARGUDE
SENIOR SECRETARY

GANESH DHAWALE
SENIOR SECRETARY

ANIKET GIRDE
SENIOR SECRETARY

TRIVENI NAGMOTI
SENIOR SECRETARY

AJINKYA KARALE
SENIOR SECRETARY

UTKARSH SAKHARKAR
MAGAZINE CO-ORDINATOR

SATYAJIT GAIKWAD
MAGAZINE CO-ORDINATOR

JENIS DHOLARIYA
MAGAZINE CO-ORDINATOR

NILESH RAI
MAGAZINE CO-ORDINATOR

HIMANSHU DESHMUKH
MAGAZINE CO-ORDINATOR

SAMEER GIRDE
MAGAZINE SECRETARY

OM KHADATKAR
MAGAZINE SECRETARY

SAHIL GIRSAWALE
MANAGEMENT SECRETARY

JANHAVI ASKAR
MAGAZINE SECRETARY

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ANUJ WATE
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TEAM MEMBER

ANKITA DEWASE
TEAM MEMBER

GAYATRI SAYAM
TEAM MEMBER

CONTENTS

SMART MATERIALS AND STRUCTURES

SHAPE-MEMORY ALLOYS, POLYMERS, AND HYBRID COMPOSITES

“SHAPING SUSTAINABLE AND INTELLIGENT BUILT ENVIRONMENT”

In the modern world, the crisis of moral and physical obsolescence increasingly affects human life and all sectors of industrial innovation. The fundamental concept, typical of the new industrial revolution facing contemporary society, is based on innovative technology that aims to promote an increase in the quantity of available quality information for the realization of increasingly advanced intelligent environments, which are essential today for a constantly growing proportion of human activities. Thus, special functional materials, called SMART materials, capable of interacting with their actual or virtual environment, represent a crucial and essential phase. The transformation from conventional construction to the Internet of Construction is just around the corner. The vision of the future will support global digital models of the territory, namely living territorial information systems, where prefabricated construction systems will need to interact with integrated/membrane materials, components, and adaptive SMART systems by advanced services for monitoring and controlling transformations, changes, and potential risks in favor of the achievement of sustainable and resilient goals.However, although intelligent and adaptive structures are absolutely strategic pillars in the construction industry, characterized by a relatively low innovative push, at least up to now, the largest percentage of triennial R&D often dedicated to structures has focused on strength, durability, reduction of materials and/or energy consumption, life cycle reduction, construction speed, modularity, cost, and simplification of the design phase.SMART materials, usually characterized by reversible or irreversible changes in their properties in a controlled way, often with locally, macroscopically small doses of electromagnetic radiation, magnetism, mechanical stresses, inclusion of a chemical species, or intrinsically different types of stimuli, can play a critical role in these debates.Sustainable global objectives are nothing less than the search for new eco-compatiblematerials, support for the intrinsic capacity of orientation and automatic internal connection, and the creation of external facilities to control the state in space and time. SMART materials and systems can therefore revolutionize the field of construction up to now based on the macro-objects concept.

Aarya Chore
3rd Year A

“DESIGNING FOR THE FUTURE: HOW SMART ARCHITECTURE IS REVOLUTIONIZING URBAN PLANNING”

Smart architecture is revolutionizing urban planning by integrating advanced technologies and design principles to create adaptable, efficient, and resilient urban spaces. This approach addresses challenges such as population growth, environmental sustainability, and infrastructure management. Smart architecture employs design strategies that incorporate technology and data to enhance urban planning. Features like smart grids, digital twins, and automated building systems allow for better planning and management of urban environments. Digital twins, for example, create virtual models of physical spaces, enabling planners to simulate and optimize various scenarios. This contributes to more responsive and adaptable urban environments, allowing cities to better manage traffic, optimize energy use, and improve public services, resulting in more livable, efficient, and sustainable urban areas. However, challenges in smart urban planning include high costs, technological integration, and data privacy concerns.

Future developments may focus on improving technology affordability, enhancing data security, and fostering collaboration between urban planners, technologists, and policymakers. Additionally, the collection and management of large volumes of data raise significant privacy concerns. To address these issues, future developments may focus on making technology more affordable, enhancing data security measures, and fostering greater collaboration between urban planners, technologists, and policymakers. These efforts will be essential for the successful and sustainable growth of smart cities.

Om Khadatkar
3rd Year B

“VERTICAL FORESTS: A GREEN REVOLUTION IN URBAN ARCHITECTURE”

Imagine a skyscraper not just reaching for the sky, but bringing the sky down to the city. That’s the breathtaking concept behind Vertical Forests, where architects are cultivating lush, living ecosystems on the facades of high-rises. These aren’t just aesthetic flourishes. These green giants act as urban lungs, absorbing pollution, regulating temperatures, and providing vital habitats for birds, insects, and even small mammals. For city dwellers, they offer a touch of nature amidst the concrete jungle, improving air quality and creating serene spaces for relaxation. Beyond the environmental benefits, Vertical Forests are a testament to human ingenuity. They challenge us to rethink our relationship with nature and inspire a new era of sustainable urban living. In essence, they’re a bold statement: We can build upwards while simultaneously bringing nature back down to earth. Vertical forests integrate lush greenery into high-rise buildings providing urban areas with natural ecosystems. Trees shrubs and plants on balconies and facades absorb carbon dioxide produce oxygen and improve air quality. Beyond environmental benefits these innovative structures reduce urban heat island effects enhance biodiversity and create visually stunning cityscapes. Smart irrigation systems manage water efficiently while automated monitoring ensures plant health. Pioneered in cities like Milan and Singapore vertical forests symbolize a harmonious blend of nature and urban living. As urbanization grows they offer a sustainable solution for creating greener healthier cities. With their unique blend of architecture and ecology vertical forests are a game-changer for urban planning.

Sahil Girsawale
3rd Year B

“WATER MANAGEMENT IN SMART CITIES: INNOVATIONS IN URBAN WATER INFRASTRUCTURE ”

Water management is a crucial element of smart cities, with innovations in urban infrastructure playing a key role in addressing challenges like water scarcity, pollution, and infrastructure efficiency.Smart technologies are transforming how water resources are managed and conserved in urban environments. Among these technologies are sensors, data analytics, and automated control systems. Sensors are used to monitor water quality and usage, while data analytics provide valuable insights into consumption patterns and potential issues. Automated systems, in turn, enable real-time adjustments to water distribution and treatment processes.The benefits of these innovations in water management are significant, leading to improved efficiency, reduced waste, and enhanced sustainability of urban water systems. By integrating smart technologies, cities can better manage their water resources, quickly respond to leaks and other issues, and ensure a reliable supply of clean water.However, challenges remain, including the high cost of implementing these technologies and the need for effective system integration.Future developments in water management may focus on improving sensor accuracy, enhancing data analytics capabilities, and further integrating water management systems with broader smart city infrastructure.

Anjali Meshram
3rd Year B

“ADAPTIVE BUILDING ENVELOPES”

Adaptive building envelopes are at the forefront of sustainable and intelligent architectural design, incorporating materials that dynamically respond to environmental conditions to enhance both energy efficiency and occupant comfort. Thermo-responsive materials are a prime example, as they can adjust their properties, such as transparency and insulation, based on temperature variations. This adaptability allows buildings to optimize natural light and heat retention, thereby reducing reliance on artificial heating, cooling, and lighting systems. As a result, these materials contribute to significant energy savings while maintaining a comfortable indoor environment. Smart glass and dynamic facades further advance this concept by automatically altering their tint or transparency in response to sunlight. By controlling the amount of natural light entering a building, these systems minimize the need for artificial lighting during the day and reduce the load on HVAC systems, leading to lower energy consumption and operational costs. These facades can also enhance privacy and aesthetic appeal, offering a modern solution that combines functionality with design.In addition to controlling light and temperature, adaptive building envelopes also focus on improving indoor air quality through innovations like breathable walls. These walls adjust their permeability based on environmental conditions, such as humidity and air quality, to regulate airflow within the building.

Janhavi Askar
3rd Year A

“GREEN ARCHITECTURE: INTEGRATING SUSTAINABLE PRACTICES IN SMART BUILDINGS”

Green architecture aims to design buildings that are environmentally sustainable, resource-efficient, and capable of reducing their carbon footprint. Integrating green practices into smart buildings enhances their environmental performance and aligns with broader sustainability goals. Green architecture incorporates principles such as energy efficiency, water conservation, and the use of sustainable materials. Features like passive solar design, green roofs, and high-performance windows reduce energy consumption and promote a healthier indoor environment. When combined with smart technologies, green architecture becomes even more effective. Smart buildings use sensors and automation to manage lighting, heating, and cooling more efficiently. For example, smart thermostats adjust temperatures based on real-time occupancy data, while automated shading systems optimize natural light use.However, green architecture faces challenges such as higher initial costs and the need for specialized knowledge in design and technology. Implementing sustainable practices and advanced technologies often requires significant upfront investments, which can be a barrier for some projects. Additionally, expertise in sustainable materials and energy-efficient systems may not be widely available. However, as technologies advance and become more affordable, these challenges are expected to diminish. This progress will likely lead to the broader adoption of sustainable practices in smart buildings, making green architecture more accessible and enabling more buildings to positively impact environmental sustainability.

Sameer Girde
3rd Year B

“COMPUTATIONAL MATERIALS AND MODELLING”

Computational materials and modeling are revolutionizing the field of civil engineering by enabling researchers and engineers to solve complex problems more efficiently and realistically. These advanced tools allow for the simulation of material behaviors under various conditions, significantly reducing the need for extensive physical testing and enhancing the precision of material design and performance predictions.

The strategic advancement of this field is further supported by the new Material Genome Initiative (MGI) plan, which focuses on integrating computational models with experimental tools and quantitative data. This unified Materials Innovation Infrastructure enables more accurate simulations and provides a continuous pipeline of data to validate these models. For civil engineers, this approach can inform the design of more resilient materials for structures, optimizing factors like mechanical strength, energy efficiency, and long-term sustainability. Computational tools are now being applied to various challenges in civil engineering, including the simulation of mechanical behavior under dynamic loads, prediction of corrosion resistance for materials used in bridges and buildings, and even the study of battery charging dynamics for smart infrastructure systems. These advancements are transforming how engineers approach material selection and structural design, allowing for more innovative and efficient solutions.

Looking to the future, computational materials and modeling are set to play an even larger role in civil engineering. As these tools become more advanced and accessible, they will continue to enable the discovery, design, and development of new materials that are essential for the next generation of sustainable infrastructure. Through this integration of computational and experimental approaches, civil engineers will be able to create stronger, more durable, and environmentally friendly structures that meet the demands of a rapidly changing world.

Janhavi Dhurve
3rd Year A

“SMART BUILDING MATERIALS: INNOVATIONS IN SUSTAINABLE CONSTRUCTION”

Smart building materials are revolutionizing sustainable construction by enhancing performance, durability, and environmental impact, significantly contributing to the overall efficiency and sustainability of smart buildings. These innovative materials include self-healing concrete, phase-change materials, and responsive facades. Self-healing concrete contains microorganisms that repair cracks, thereby extending the material's lifespan. Phase-change materials absorb and release heat to regulate indoor temperatures, while responsive facades adjust to environmental conditions to optimize energy use. The use of these smart materials reduces maintenance needs, lowers energy consumption, and minimizes the environmental impact of construction, leading to buildings that are not only more efficient but also more resilient and long-lasting. The adoption of smart building materials in sustainable construction faces several challenges. High costs are a significant barrier, as these advanced materials often require substantial investment, making them less accessible for some projects. Additionally, the implementation of smart materials demands specialized knowledge in both design and construction, which may not be widely available. This expertise is crucial for effectively integrating these materials into building projects to maximize their benefits. Despite these challenges, as technology continues to advance and costs decrease, the integration of smart building materials is expected to become more widespread, leading to greater innovation and sustainability in construction practices.

Khushi Bhujade
4th Year A

“RESPONSIVE INFRASTRUCTURE”

Responsive infrastructure is revolutionizing the field of civil engineering by incorporating smart materials and systems that adapt to changing environmental conditions, thereby enhancing the resilience and safety of structures. Shape-memory alloys are a key innovation in seismic design, as these materials can return to a predetermined shape after experiencing deformation, significantly improving the earthquake resistance of buildings and bridges. By absorbing and dissipating seismic energy, shape-memory alloys help prevent structural failure during earthquakes, providing a robust solution for regions prone to seismic activity. In flood-prone areas, smart flood barriers represent another critical advancement. These barriers are designed to automatically deploy when water levels rise, offering real-time protection against flooding in urban areas. Their ability to respond swiftly to environmental changes minimizes damage and ensures the safety of communities during extreme weather events. Adaptive load-bearing structures enhance infrastructure resilience by dynamically adjusting load distribution in response to external forces like wind and seismic activity. By redistributing stress and optimizing performance in real time, these systems reduce structural damage and extend the lifespan of critical infrastructure.

Jaykrit Bajariya
4th Year A

"RETROFITTING EXISTING BUILDINGS: CHALLENGES AND OPPORTUNITIES FOR SMART URBANIZATION"

Retrofitting existing buildings to incorporate smart technologies is a crucial step in modernizing urban environments, offering both challenges and opportunities. This process involves upgrading older structures to align with contemporary efficiency and sustainability standards. However, retrofitting poses significant challenges, such as integrating new technologies with existing systems, managing structural limitations, and addressing potential disruptions during the upgrade process. Additionally, the cost of retrofitting can be substantial, and navigating the complex process of obtaining permits and approvals can be daunting. Despite these hurdles, retrofitting provides substantial opportunities to enhance building performance, reduce energy consumption, and improve occupant comfort. Implementing upgrades like smart lighting, advanced HVAC systems, and energy-efficient windows can drastically increase a building's sustainability and operational efficiency. Looking ahead, future trends in retrofitting may include advancements in materials and technologies, better integration with smart city infrastructure, and innovative financing models to support such upgrades. As retrofitting becomes increasingly prevalent, best practices and standards will continue to evolve, further driving the modernization of urban spaces.

Pranjal Wanve
4th Year A

"ADVANCED STRUCTURAL HEALTH MONITORING"

Advanced Structural Health Monitoring (SHM) systems are transforming the way we maintain and ensure the safety of critical infrastructure, such as bridges and dams, by incorporating cutting-edge technologies that offer real-time insights into structural integrity. Piezoelectric materials play a crucial role in these systems by generating an electric charge when subjected to mechanical stress, allowing for the precise detection of structural deformations, vibrations, and other stress-related anomalies. This capability enables engineers to monitor and address potential issues before they become critical, thus enhancing the overall safety and resilience of structures. Fiber optic sensors further enhance SHM by being embedded within infrastructure to continuously monitor key parameters such as strain, temperature, and pressure. These sensors provide real-time data that can be analyzed to detect early signs of wear, fatigue, or other structural issues, enabling timely interventions and reducing the risk of catastrophic failures. The integration of SHM systems in large civil structures like smart bridges and dams represents a significant leap forward in proactive maintenance strategies. By continuously assessing the health of these structures, SHM systems not only improve safety but also extend the lifespan of infrastructure, leading to more efficient and cost-effective management of civil engineering assets.

Aniket Girde
4th Year A

“POST-DISASTER STRUCTURAL DAMAGE DETECTION AND REPAIR COST ESTIMATION THROUGH COMPUTER VISION AND DEEP LEARNING METHODS”

Rapid post-diaster structural damage inspection and repair cost evaluation are crucial for building owners and policymakers to make informed risk management decisions. To improve the efficiency of such inspection, an automated end-to-end structural damage detection and repair cost estimation framework has been proposed, which consists of advanced computer vision techniques for classification and localization built on convolution neural networks.

The proposed method first identifies system-level collapse, followed by recognition of component-level damages. In the system-level assessment, ResNet has been adopted. In the component-level damage assessment, an advanced object detection neural network, named YOLO-v2, is implemented which achieves 98.2% and 84.5% average precision in training and testing, respectively. The improved classification procedures allow engineers to rapidly and more accurately quantify the damage states of the structures and also localize the critical damage features.

The identified damage state can then be integrated with the state-of-the-art performance evaluation framework to quantify the financial losses of critical reinforced concrete buildings.

The results can be used by the building owners and decision-makers to make informed risk management decisions immediately after the strong earthquake shaking. Hence, resources can be allocated rapidly to improve the resiliency of the community.

Sanskruti Moundekar
3rd Year A

DRONE-BASED AUTONOMOUS INSPECTION OF BOLTED CONNECTIONS

Structural bolts are essential elements to connect and stabilize structural components and systems. Bolt loosening at a certain level may result in catastrophic failure, leading to a significant casualty rate and large financial loss. Besides, the performance of many innovative damping devices for seismic applications is strongly affected by bolt loosening.

The identification of bolt loosening is crucial to maintain structural performance and prevent catastrophic events.

A novel drone-based 3D vision methodology has been proposed for autonomous bolt loosening assessment. First, a low-cost micro aerial vehicle (MAV) with various types of sensors is designed. Second, a drone-based autonomous image collection method is proposed. Third, a 3D point cloud of the bolted connection is generated using the acquired images. Fourth, 3D point cloud processing methods are proposed to localize and quantify bolt loosening. The proposed method has been implemented on structural beam-column connections. The results show that the proposed drone-based data collection method can effectively acquire images for 3D reconstruction.

The 3D point cloud processing methods can reliably localize and quantify bolt loosening at high accuracy. The proposed method provides a more robust and comprehensive evaluation of bolt loosening, compared to existing 2D vision methods which process 2D images captured at a specific camera view.

Aniket Deshmukh
4th Year A

“THE IMPACT OF SMART MATERIALS IN MODERN CONSTRUCTION”

The building sector is undergoing a revolutionary revolution, with smart materials changing the face of modern infrastructure. These new materials, which are adaptable and have responsive qualities, are expected to replace traditional building approaches with more inventive, efficient, and sustainable alternatives. Smart materials are also known as responsive or intelligent materials, which possess amazing capacity to change their properties in reaction to external stimuli such as temperature, light, pressure, or magnetic fields. This adaptability is a game changer in construction, making structures more durable, efficient, and self-regulating.

Shape Memory Alloys (SMAs), which can return to their original shape after deformation, are among the most remarkable smart materials. Because of this distinctive quality, SMA are widely used in earthquake resistant constructions, offering flexibility and resilience where it is mostly needed. Self-healing concrete is another novel material that solves a significant problem in the building sector that is cracking. Concrete can self-heal by incorporating healing chemicals into the material, increasing building longevity and lowering maintenance expenses.

Piezoelectric Substances: These materials produce electrical energy from mechanical stress, such as that caused by foot traffic or vehicle motion. From energy-generating roads to smart flooring, this innovative technology holds promise for use in sustainable infrastructure.

By offering real-time information on stress, strain, and other possible problems, smart materials are transforming the monitoring of structural health. Early problem identification, prompt repairs, and building safety are all made possible by embedded piezoelectric sensors in concrete. Furthermore, intelligent materials are opening the door for sustainable and energy-efficient construction. The carbon footprint of contemporary buildings is being greatly reduced by developments such as photovoltaic-integrated facades that generate electricity and self-regulating insulating materials that adjust to temperature fluctuations.

Atharva Deshmukh
4th Year A

INTER-BRANCH ARTICLES

"THE ROLE OF ARTIFICIAL INTELLIGENCE IN SMART ARCHITECTURE"

Artificial intelligence (AI) is revolutionizing smart architecture by enabling predictive analytics and automated decision-making in building management. AI systems analyze vast amounts of data from sensors embedded in smart buildings to optimize energy usage, enhance security, and improve occupant comfort.

That's the power of Artificial Intelligence (AI) in smart architecture.

AI isn't just about robots anymore. It's helping architects design buildings that are more energy-efficient, sustainable, and comfortable. AI can analyze massive amounts of data to predict how a building will perform in different conditions. This helps architects choose the best materials, optimize energy use, and even anticipate potential problems before they happen.

For example, AI can control lighting, heating, and cooling systems based on real-time data like weather and occupancy. This not only saves energy but also creates a more personalized and comfortable environment for people inside.

AI is transforming the way we build, making our cities smarter and more sustainable for the future.

For instance, AI-powered lighting systems adjust brightness based on occupancy and natural light availability, while predictive HVAC systems learn user habits to maintain ideal temperatures. In addition, AI aids in urban planning by simulating how new architectural designs will impact traffic flow, energy consumption, and community dynamics.

Beyond operational efficiency, AI contributes to the design phase by generating innovative concepts based on sustainability and functionality criteria. As AI becomes more sophisticated, its role in smart architecture will expand, fostering more efficient and adaptive built environments.

Shruti Jain
3rd Year AIML

"BIOMIMICRY IN SMART ARCHITECTURE"

Biomimicry, the practice of drawing inspiration from nature to solve human challenges, has revolutionized smart architecture. By imitating natural processes, forms, and ecosystems, architects create buildings that are more sustainable, efficient, and harmonious with the environment.

One notable example of biomimicry in architecture is designing structures inspired by organisms like termite mounds. Termite mounds maintain stable internal temperatures despite external fluctuations, influencing the development of passive cooling systems. For instance, the Eastgate Centre in Zimbabwe utilizes this principle, significantly reducing energy consumption.

Nature also inspires the development of self-cleaning and energy-efficient surfaces. The lotus leaf, known for its water-repellent properties, has guided the creation of self-cleaning coatings used in modern facades. Similarly, the textured wings of butterflies have influenced energy-efficient solar panels by optimizing light absorption.

Biomimetic smart buildings often integrate adaptive systems that mimic biological responses to environmental changes. Dynamic facades inspired by pinecones, which open and close based on humidity, help regulate light and ventilation.

By emulating nature's principles, biomimicry fosters innovation in smart architecture. It addresses sustainability challenges while promoting resilience and efficiency. As urbanization accelerates, leveraging biomimicry ensures smarter, greener cities that coexist harmoniously with the planet.

Shrushti Deshmukh
3rd Year IT

INTER-BRANCH ARTICLES

"THE INTERNET OF THINGS (IOT) AND BUILDING CONNECTIVITY"

The Internet of Things (IoT) is transforming the way we interact with buildings, making them smarter, more efficient, and deeply connected to our lives. Imagine a world where your home knows your preferences, adjusts the lighting to match your mood, or ensures your coffee is ready before you wake up. That's not a distant dream it's IoT in action. IoT connects everyday devices—like thermostats, lights, and security cameras—to the internet, allowing them to communicate and respond intelligently. In buildings, this means better energy management, enhanced security, and improved comfort. Smart sensors can detect when rooms are unoccupied and adjust heating or cooling, saving energy and reducing costs. Similarly, IoT- enabled systems can identify maintenance needs before problems arise, ensuring smooth operations.

For businesses, IoT creates highly productive environments. Connected office spaces adapt to employees' needs, optimizing meeting room usage, air quality, and even lighting based on real-time data. Such innovations not only enhance productivity but also promote well-being.

On a broader scale, IoT supports smart cities by linking buildings with urban infrastructure.Traffic management, waste collection, and even emergency services benefit from this seamless connectivity, improving urban living.

However, this connectivity comes with challenges, such as data security and privacy concerns. As we embrace IoT, robust cyber-security measures are crucial to safeguard sensitive information. IoT is more than just technology—it's about creating spaces that work for us, anticipate our needs, and adapt to our lifestyles. By embracing IoT, we're not just building smart structures; we're shaping a connected, intelligent future that enhances the quality of life for everyone.

Sanchit Khandare
3rd Year ETC

"4D PRINTING: SHAPING THE FUTURE OF MECHANICAL ENGINEERING"

4D printing transcends traditional 3D printing by incorporating time as a fourth dimension. This innovative technology allows for the creation of objects that can change shape or properties in response to external stimuli like temperature, light, or humidity.

In mechanical engineering, 4D printing unlocks a new era of adaptive structures. Imagine self-healing components that repair themselves, extending their lifespan and reducing maintenance costs. Envision smart robotic systems with 4D-printed components that adapt to unforeseen challenges, enhancing their efficiency and robustness.

Applications extend beyond these examples, encompassing areas like aerospace, where 4D-printed structures can adjust to changing flight conditions, and biomedical engineering, where implants can adapt to the unique needs of the human body.

While challenges in material development and complex design optimization persist, 4D printing presents a paradigm shift in mechanical engineering. By embracing this transformative technology, engineers can unlock unprecedented levels of functionality and create a future where machines are more intelligent, adaptable, and resilient than ever before.

Neha Geete
2nd Year AIML

Echoes in ink

English poems

Symphony of Mountains and Rivers

The mountains rise, eternal and grand,
Guardians of time, they steadfastly stand.
Cloaked in whispers of wind and mist,
Where dreams ascend, and stars persist.

Beneath their gaze, the rivers flow,
A silver thread through valleys below.
They carve the earth with patient grace,
A song of life in every trace.

Together they weave a timeless art,
Bound by nature, yet worlds apart.
The mountain's stillness, the river's glide,
A harmony sung by the earth's tide.

Eternal companions, wild and free,
Their union whispers eternity.

~Sanket Kanhere

Dance of the Winds

The winds arise at break of dawn,
A breath of life to the sleeping lawn.
They race the clouds, they chase the rain,
An unseen force across the plain.

A gentle breeze, a tempest's might,
They carry the scent of the day and night.
Through fields of gold and deserts bare,
The winds weave tales beyond compare.

They cradle the world in their endless embrace,
A dancer unseen, with infinite grace.
In their song lies the story of time,
A ceaseless melody, free and sublime.

~Sanskruti Moundekar

Echoes in ink

English poems

Silence

Silence is noble.
Silence is powerful!
It is my loudest scream,
It is the hardest feeling!
It feels heavy inside,
Without even a sigh outside.
Silence is my favourite thing next to you,
I don't know whether to call it
the best or the worst thing to be!
Silence is my new love language maybe
Yes I am fluent at it!
It does say a alot,
A lot more than what my words did,
I stand here not to testify ,
Not to explain , not to revert,
But just to stay.
To stay where I was,
Submissive and in silence.

~ Aarya Chore

Rise

When shadows fall and doubts arise,
Remember the fire within your eyes.
The path ahead may twist and turn,
But every setback's a chance to learn.

Rise with purpose, stand your ground,
In trials, strength is always found.
The storm will pass, the skies will clear,
Your dreams are waiting; draw them near.

Believe in yourself, the world is wide,
With courage and hope as your guide.
No mountain's too high, no river too deep,
Chase your vision; it's yours to keep.

~ Jenis Dholariya

सप्तरंग

निसर्ग

धरती आपुली सुंदर सुंदर
हिरवळ आहे चोहीकडे
दिसते का कोठे वनराई ?
काँक्रिटची जंगले इकडे तिकडे ।

संथ वाहणाऱ्या सुंदर नद्या
मोजा त्यातील प्लास्टिकच्या बाटल्या
उंच उंच रम्य डोंगरावर
खार्णीच्या नक्षी कोणी रेखाटल्या ?

कधी जाग येईल या मानवाला
कळेल कधी त्याला आपली चूक
एक दिवस निसर्गच नसेल तर
कोण भागवणार त्याची भूक ?

संस्कृति संजय मौंदेकर

महाविद्यालय

ज्ञानसागर खोल, तळमळीचा ध्यास,
मित्रांच्या संगती, आनंदाचा रास.
शिक्षणाची वाट, पुस्तकांची साथ,
महाविद्यालय, सुवर्णकाळ हाच.

प्रोफेसर मार्गदर्शन, ज्ञानाचा उगम,
वादविवादांचा धुरळा, विचारांचा पगडम.
क्रीडांगणांवर उमटणारे पाय,
महाविद्यालय, आयुष्याचा नवा वळण.

नवीन अनुभव, नवीन मित्र, नवीन जग,
आत्मविश्वासाचा जन्म, नवीन उड्डाण.
या क्षणींची जपण, आठवणींचा सागर,
महाविद्यालय, जीवन ज्योतीचा अगर.

अथर्व देशमुख

सप्तरंग

नव्या दिशा

सकाळची किरणं, उजळून जातात,
तुझ्या पावलांना नव्या वाटा दाखवतात.
स्वप्नांच्या वेलीला नवा अंकुर फुटो,
हरवलेलं जग तू पुन्हा गाठू पाहो.

चंद्र तुझा सखा, ताऱ्यांचा थवे,
रात्रीच्या नभात तुझं स्वप्न झळके.
धीराचा हात धर, घे उंच भरारी,
नशिबाच्या गगनात उमटव चमक सारी.

आशेचा दीप तुझ्या मनात जळो,
प्रयत्नांच्या वाऱ्यांनी तो तेजाळू दे नितळ.
गती मिळो नशिबाला, थांबू नकोस कधी,
तूच बनशील युगाचा नवा कवी.

अजिंक्य केशव कराळे

नाद

सर्वत्र व्याप्त आहे नाद,
अंतर्यामीचा शब्दवाद.
स्पंदन करीत निरंतर,
अंतराळात गाजतो ध्वनीसर.

शांततेतही तो गुंजतो,
अंतर्मुखी मन जाणतो.
ओमकाराचा जप करीत,
आनंदाचा सागर भरित.

पक्ष्यांच्या किलबिल्यात,
वाऱ्याच्या सोंग्यात.
झरांच्या गडगडात,
सर्वत्र तोच नाद साद.

योगींच्या ध्यानधारणेत,
भक्तिच्या रसास्वादेत.
नादानुभूती साक्षीदार,
मोक्षपथाचा तोच द्वार..

त्रिवेणी सुधाकर नागमोती

||साहित्य||

लड़कियां

लडकियाँ जब लेती हैं जन्म ।
मिटा देती है सारे गम ।।
सुनाई देती है उसके पायल की झंकार।
तो खिल उठता है सारा परिवार ।।
लडकियाँ है माता पिता की शान ।
वही है चेहरे की मुस्कान ।। 1 ।।

लडकियों में भरी है कुट कुट के सच्चाई।
उसके हर कार्य में दिखती है उसकी अच्छाई ।।
लडकियाँ है आसमान का तारा ।
जिसने न पाया वह जिंदगी से हारा ।।
लडकियों को आता है हर दुख सहना।
वही है माता पिता का असती गहना ।। 2 ।।

लडकियाँ करती है हर दुख कम ।
लेती है बिदाई तो आँखे होती है नम ।।
लडकियों में होते है गुण सभी ।
तभी तो कहलाती है घर की लक्ष्मी ।।
वही तो है माता पिता का मान।
वही है उनकी जान ।। 3 ।।

संस्कृति संजय मौंदेकर

सड़क

सड़क चलती है, दूर तक जाती है,
कहानियाँ लेकर, मन को बहलाती है।
यात्रियों से भरी, जीवन की धारा,
सड़क चलती है, बिना किसी थकान।

गाँव से शहर तक, जोड़ती है सबको,
प्रेम की डोर सी, बांधे रखती है सबको।
दूरदर्शन दिखाती है, नए-नए दृश्य,
सड़क चलती है, निरंतर प्रवासी।

यात्रियों के सपने, सवार होते हैं,
नई उम्मीदों से, मन भरपूर होते हैं।
सड़क चलती है, आगे बढ़ती है,
जीवन का मार्ग, दिखाती है।

केयुर सावलिया

साहित्य

श्रम

श्रम ही जीवन है, श्रम ही धर्म है,
पसीने की बूंदों से, जीवन निर्मित है।
किसान खेत में, मजदूर पथ पर,
सबका श्रम महान, सबका योगदान।

गर्मी की धूप में, सर्दी की ठंड में,
लगातार चलता है, श्रम का ये चक्र।
हाथों से रचता है, जीवन का ताना-
बाना, श्रम ही जीवन है, सच्चा सहारा।

श्रम का सम्मान, समाज का कर्तव्य,
उनके बिना जीवन, अधूरा है सर्वत्र।
श्रम ही समृद्धि है, देश का गौरव है,
आओ सब मिलकर, श्रम का सम्मान करें।

आर्या चोरे

न रुकेंगे कभी

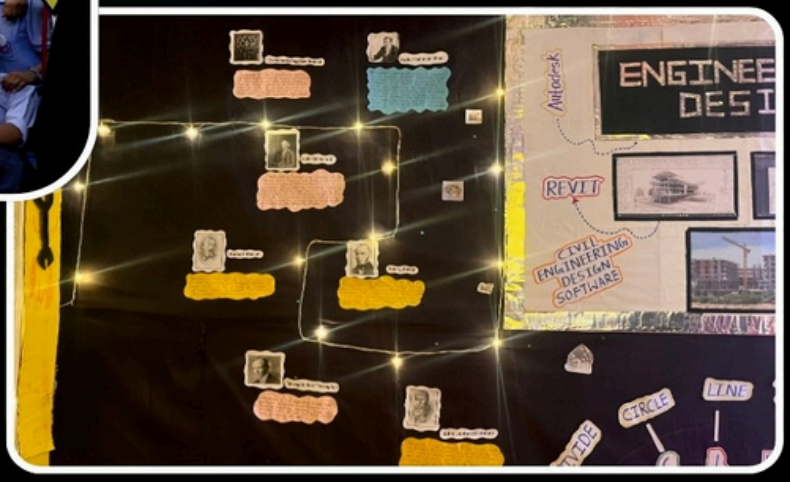
कर लो एक वादा खुदसे, नही मानेंगे
हार आजसे, लड़ेंगे आखरी पल तक,
नहीं मिल जाती मंजिल जब तक,
मारेगी दुनिया हज़ार ताने,

चलते रहेंगे निरंतर अपने लक्ष्य को
पाने., मिलेंगे मतलबी लोग हज़ार,
उनसे जीतकर ही मनाएंगे जीत का
त्यौहार.,

नहीं कर सकता कोई तुम्हे तुम्हारी
मंजिल से दूर, कभी न होने देना अपने
सपने चूर-चूर.

खुशी कटरे

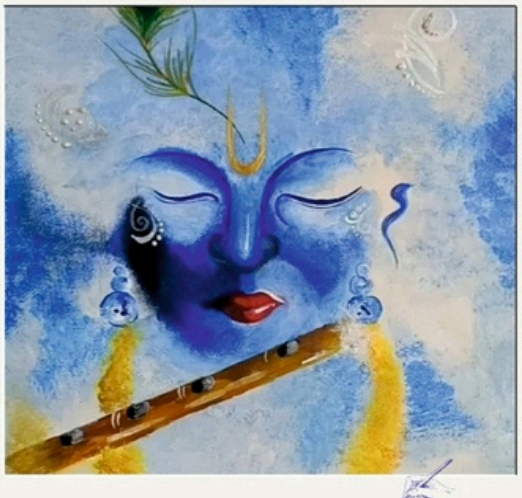
POSTER MAGAZINE



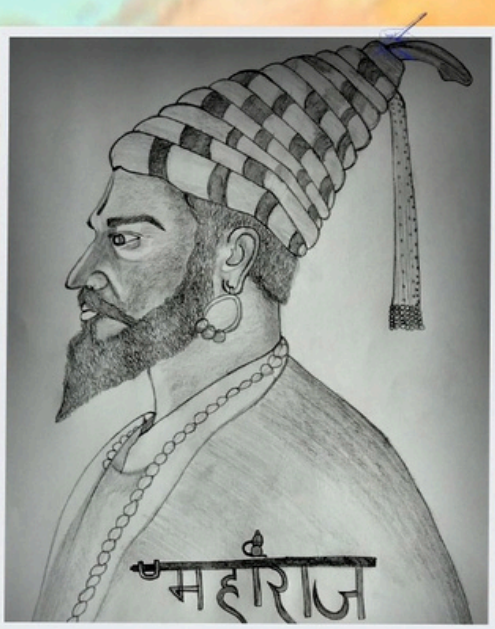
INAUGRATION 2025

ART

Arya Choudhary



Tanuja Hargude



Bhargavi Gujar

Tanuja Hargude

ARENA

Om Khadatkar

Ishita Dabrase

Arya Choudhary

Vaibhav Giradkar

CAPTURED

VEDANT GHODE

JENIS DHOLARIYA

SAHIL GIRSAWALE

JANHAVI ASKAR

MOMENTS

RUDRA YADAV

ASHLESHA RATHOD

TEJAS SAKURE

SAHIL GIRSAWALE

FLASH


DEPARTMENT OF CIVIL ENGINEERING
SPARSH 2024
MAGAZINE LAUNCH


DEPARTMENT OF


ADMINISTRATIVE COMPLEX

BACK

2ND A

2ND B

3RD A

3RD B

4TH A

4TH B

TEACHING STAFF

NON-TEACHING STAFF

Faculty Achievements

Sr. No.	Name of the Award/ Recognition	Name of Faculty	Title\Particulars	Name of the Awarding Body/Agency	Date	Year
1	Phd Award	Dr.Rajesh M. Bhagat	Development of Composite Adsorbent for Removal of Heavy Metal from Industrial Wastewater.	RTMNU,Nagpur	12.03.2024	2023-24
2	Phd Award	Dr.Sangita Shivcharan Meshram	Design and Development of Sustainable Building Blocks using Cupola Slag	RTMNU,Nagpur	07.05.2024	2023-24
3	Phd Award	Dr. Amruta Arun Yadav	Utilization of Metakaolin and Copper slag in Concrete for Sustainable Infrastructure Parametric	RTMNU,Nagpur	07.05.2024	2023-24
4	Phd Award	Dr.Monali Rewashankar Wagh	Study on physico-mechanical properties of self-compacting concrete blended with bagasse ash, metakaolin and glass fiber	RTMNU,Nagpur	07.05.2024	2023-24
5	Phd Award	Dr. Mrs. Vaishali Nilesh Mendhe	Compressive Strength Prediction of Nano-Silica Incorporated Concrete using Artifical Inteligence IOT Based	Kalinga University,Naya Raipur	01.08.2024	2024-25
6	Patent	Dr.Sneha Hirekhan	Smart Construction Helmet	Indian Patent Office	08.08.2024	2024-25
7	Patent	Dr.Sangita Shivcharan Meshram	A Composition for Making High Strength Sustainable Bricks from Cupola Slag	Indian Patent Office	02.08.2024	2024-25
8	Patent	Prof.Charuta Subhash Waghmare Dr. Khalid Shamim Ansari	Absorbent and Process of Developing the adsorbent from Marigold flower waste	Indian Patent Office	11.07.2024	2024-25
9	Book Published	Dr. Ajay Gajbhiye. Dr. Ms. Madhuri Bhagat	Hydrologey and water Resources Engineerng	EVINCE Pub Publshing, India ISBN 9789356735125	01.08.2024	2024-25
10	Book Published	Dr. Khalid Shamim Ansari	Basic elements of Environmental Management	India ISBN: 978-81-972292-6-8	01.08.2024	2024-25
11	Book Published	Dr. Mrs. Boskey Vishal Bahoria	Building Construction	India ISBN: 978-81-972292-6-8	01.08.2024	2024-25

Student Achievements

PLACEMENTS

Sr.No.	Name of StudentN	Company	Package (LPA)
1	Ganesh Manik Dhawale	Larsen & Toubro Limited	6.5
2	Sonali Chandankhede	Larsen & Toubro Limited	6.5
3	Atharva Deshmukh	Techture	4.0
4	Aniket Deshmukh	Techture	4.0
5	Rugved Dewaikar	Techture	4.0
6	Sayali Deshpande	Techture	4.0
7	Aditi Gupta	LTTS	4.0
8	Rahul Rathod	LTTS	4.0
9	Aditi Gupta	ARK construction	3.5
10	Sumit Thakre	ARK construction	3.5
12	MD Sanim Rahat	ARK construction	3.5
13	Adwet Khule	ARK construction	3.5

Departmental Achievements

NABL CERTIFICATE

National Accreditation Board for Testing and Calibration Laboratories

NABL

CERTIFICATE OF ACCREDITATION

YESHWANTRAO CHAVAN COLLEGE OF ENGINEERING
CONCRETE TECHNOLOGY LABORATORY

has been assessed and accredited in accordance with the standard

ISO/IEC 17025:2017

"General Requirements for the Competence of Testing & Calibration Laboratories"

for its facilities at

HINGNA ROAD, WANADONGRI, NAGPUR, MAHARASHTRA, INDIA

in the field of

TESTING

Certificate Number: TC-12358

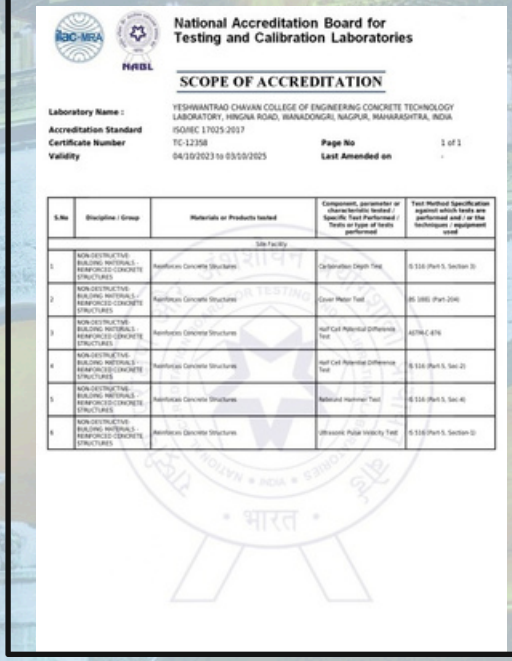
Issue Date: 04/10/2023 Valid Until: 03/10/2025

This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard & the relevant requirements of NABL.
(To see the scope of accreditation of this laboratory, you may also visit NABL website www.nabl-india.org)

Name of Legal Entity: Nagar Yuwak Shikshan Sanstha

Signed for and on behalf of NABL

N. Venkateswaran
Chief Executive Officer



National Accreditation Board for Testing and Calibration Laboratories

NABL

SCOPE OF ACCREDITATION

Laboratory Name : YESHWANTRAO CHAVAN COLLEGE OF ENGINEERING CONCRETE TECHNOLOGY LABORATORY, HINGNA ROAD, WANADONGRI, NAGPUR, MAHARASHTRA, INDIA

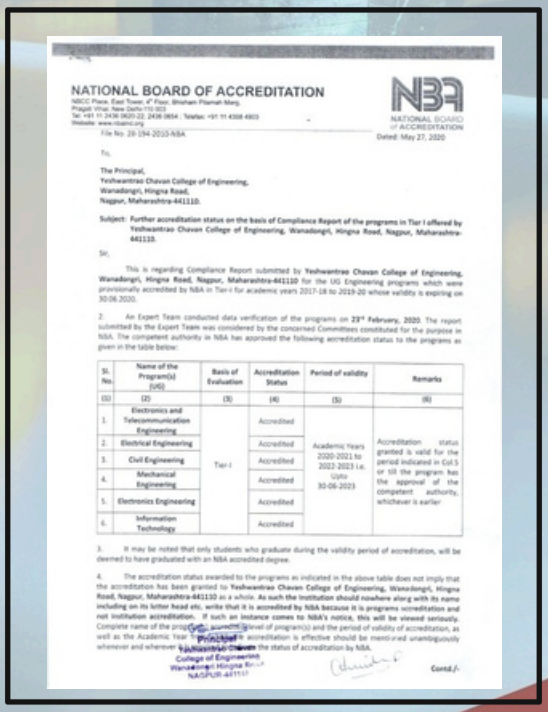
Accreditation Standard ISO/IEC 17025:2017

Certificate Number TC-12358 Page No 1 of 1

Validity 04/10/2023 to 03/10/2025 Last Amended on -

S.No	Discipline / Group	Materials or Products tested	Component, parameter or characteristic tested / Specific Test Performed / Tests or type of tests performed	Test Method Specification against which tests are performed and / or the techniques / equipment used
Site Facility				
1	NON-DESTRUCTIVE BUILDING MATERIALS - REINFORCED CONCRETE STRUCTURES	Reinforces Concrete Structures	Carbonation Depth Test	IS 516 (Part 5, Section 3)
2	NON-DESTRUCTIVE BUILDING MATERIALS - REINFORCED CONCRETE STRUCTURES	Reinforces Concrete Structures	Cover Meter Test	IRS 1001 (Part-2014)
3	NON-DESTRUCTIVE BUILDING MATERIALS - REINFORCED CONCRETE STRUCTURES	Reinforces Concrete Structures	Half Cell Potential Difference Test	ASTM C 876
4	NON-DESTRUCTIVE BUILDING MATERIALS - REINFORCED CONCRETE STRUCTURES	Reinforces Concrete Structures	Half Cell Potential Difference Test	IS 516 (Part 5, Sec 2)
5	NON-DESTRUCTIVE BUILDING MATERIALS - REINFORCED CONCRETE STRUCTURES	Reinforces Concrete Structures	Rebound Hammer Test	IS 516 (Part 5, Sec 4)
6	NON-DESTRUCTIVE BUILDING MATERIALS - REINFORCED CONCRETE STRUCTURES	Reinforces Concrete Structures	Ultrasonic Pulse Velocity Test	IS 516 (Part 5, Section 1)

NBA CERTIFICATE



NATIONAL BOARD OF ACCREDITATION

NBCC Place, East Tower, 4th Floor, Bhisham Pitamah Marg, Pragati Vihar, New Delhi-110 003
Tel: +91 11 2436 0620-22, 2436 0654 Telefax: +91 11 4358 4903
Website: www.nbaind.org

NATIONAL BOARD of ACCREDITATION

File No. 28-194/2010-NBA Dated: May 27, 2020

To,

The Principal,
Yeshwantrao Chavan College of Engineering,
Wanadongri, Hingna Road,
Nagpur, Maharashtra-441110.

Subject: Further accreditation status on the basis of Compliance Report of the programs in Tier I offered by Yeshwantrao Chavan College of Engineering, Wanadongri, Hingna Road, Nagpur, Maharashtra-441110.

Sir,

1. This is regarding Compliance Report submitted by **Yeshwantrao Chavan College of Engineering, Wanadongri, Hingna Road, Nagpur, Maharashtra-441110** for the UG Engineering programs which were provisionally accredited by NBA in Tier-I for academic years 2017-18 to 2019-20 whose validity is expiring on 30.06.2020.

2. An Expert Team conducted data verification of the programs on **23rd February, 2020**. The report submitted by the Expert Team was considered by the concerned Committees constituted for the purpose in NBA. The competent authority in NBA has approved the following accreditation status to the programs as given in the table below:

Sl. No	Name of the Program(s) (UG)	Basis of Evaluation	Accreditation Status	Period of validity	Remarks
(1)	(2)	(3)	(4)	(5)	(6)
1.	Electronics and Telecommunication Engineering	Tier-I	Accredited	Academic Years 2020-2021 to 2022-2023 i.e. Upto 30-06-2023	Accreditation status granted is valid for the period indicated in Col.5 or till the program has the approval of the competent authority, whichever is earlier
2.	Electrical Engineering		Accredited		
3.	Civil Engineering		Accredited		
4.	Mechanical Engineering		Accredited		
5.	Electronics Engineering		Accredited		
6.	Information Technology		Accredited		

3. It may be noted that only students who graduate during the validity period of accreditation, will be deemed to have graduated with an NBA accredited degree.

4. The accreditation status awarded to the programs as indicated in the above table does not imply that the accreditation has been granted to **Yeshwantrao Chavan College of Engineering, Wanadongri, Hingna Road, Nagpur, Maharashtra-441110** as a whole. **As such the Institution should nowhere along with its name including on its letter head etc. write that it is accredited by NBA because it is programs accreditation and not institution accreditation. If such an instance comes to NBA's notice, this will be viewed seriously.** Complete name of the program, appropriate level of program(s) and the period of validity of accreditation, as well as the Academic Year to which the accreditation is effective should be mentioned unambiguously whenever and wherever Yeshwantrao Chavan the status of accreditation by NBA.

Principal
Yeshwantrao Chavan
College of Engineering
Wanadongri, Hingna Road
NAGPUR-441110

Contd./-

SWAYAM NPTEL

Sr. No.	Name Of Faculty	Name of course	Timeline	Duration	Date of Exam	Result
1	Prof. Sagar Dhengre	Building Material & Composites	July-December 2024	08 Weeks	22.09.24	Pass
2.	Prof. Sagar Dhengre	Building Material as a cornerstone to Sustainability	July-December 2024	12 Weeks	27.10.24	Pass
3.	Dr. Charuta Waghmare	Sustainable Engineering Concepts & Life Cycle Analysis	July-September 2024	08 Weeks	21.09.24	Pass with Silver
4.	Dr. Khalid Ansari	Sustainable Engineering Concepts & Life Cycle Analysis	July-September 2024	08 Weeks	21.09.24	Pass with Silver

CONSULTANCIES

Department of Civil Engineering

1	Certificate Course on Water Gems (IRG)	Various Professionals	2023-24
2	UP Jal Nigam, WSS, Vigilance, Lucknow	Ceinsys Tech Ltd., Nagpur	2023-24
3	Water Audit	Muncipal Council Goregaon	2023-24
4	Strength checking and Structural Audit	Auction Hall (Santra Market) Kalamna, Nagpur.	2023-24
5	Estimating and wok order Prepration	DMIHER (DU)., Wardha	2023-24
6	UP Jal Nigam, WSS, Vigilance, Lucknow	Ceinsys Tech Ltd., Nagpur	2023-24
7	Strength checking and Structural Audit	Auction Hall (Santra Market) Kalamna, Nagpur.	2023-24
8	Certificate Course on Water Gems (IRG)	Various Professionals	2024-25
9	Strength checking and Structural Audit	APMC, Saoner, Nagpur.	2024-26
10	Green Audit (22-23)	YCCE, Nagpur	2024-27
11	Certificate Course on Water Gems (IRG)	Various Professionals	2024-28
12	Various Materials	Various Clients	2024-29
13	Estimation and Site Supervesion	Marotkar Infra, Nagpur.	2024-30

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