



Dr. M.G.R

EDUCATIONAL AND RESEARCH INSTITUTE

(Deemed to be University with Special Autonomy Status)
(Accredited by NAAC with 'A' Grade & An ISO 21001 : 2015 Certified Institution)

An ISO Certified Institution



FACULTY OF ENGINEERING AND
TECHNOLOGY

DEPARTMENT OF CIVIL ENGINEERING



CIVIL CONTOUR

2022 - 2023



INNOVATE



CONSTRUCT



SUCCEED



SUSTAIN



ABOUT THE UNIVERSITY



Aiming to bring about change and progress through education, the Tmt. Kannammal Educational Trust was constituted in 1985 and started Thai Moogambigai Polytechnic College. Within three years of its inception, **Dr.M.G.R** Engineering college was founded in 1988, and the Thai Moogambigai Dental College inception, Dr.M.G.R Engineering college was founded in 1988, and the Thai Moogambigai Dental College was started in the year 1991. Both the colleges acquired **Deemed university status in 2003** as Dr. M.G.R. Educational and Research Institute as per the orders of the **University Grants Commission, New Delhi** and the **Union Ministry of Human Resources and Development, Government of India, New Delhi**.



The 21st century poses a lot of challenges that could be overcome with the help of Education and Technology, Keeping this in mind **Dr. M.G.R. Educational and Research Institute University** was started with a vision of providing a better foothold for the students of today to face the challenges. To succeed in the world today you more than just Academics. The modern adults is expected to have a combination of technical Know-how and ambitious confidence. Being aware of the demand that is placed on the youth today, Dr. M.G.R. Educational and Research Institute University has preserved to nurture and groom young men and women through **Engineering, Medical, Dental and Humanities and Sciences**.



The adoption of sustainable practices not only **reduces construction costs** in the long term but also improves the **quality of life** for future generations.

FROM THE PRESIDENT'S DESK



THIRU A.C.S ARUN KUMAR

B.TECH (HONS.), LMISTE, MIET (UK), LMCSI

I am delighted to know that the Department of Civil Engineering of Dr. M.G.R Educational and Research Institute University is publishing a Technical Magazine **“CONTOUR 2022 - 2023”**

I hope that this magazine will emerge out well and help people know more about the times.

I wish all the success for the magazine.

ER. A.C.S. ARUN KUMAR



EDUCATION



RESEARCH



INNOVATION



EXCELLENCE

FROM THE VICE CHANCELLOR'S DESK



PROF. Dr. S. GEETHALAKSHMI VICE-CHANCELLOR

It is indeed a matter of great happiness to and that the Department of Civil Engineering at Dr. M.G.R. Educational & Research Institute University proposed to publish its Technical Magazine **CONTOUR 2022 - 2023**.

A Technical Magazine such as this is required for growth and progress of departmental activities, including publishing articles, papers, research activities etc. I am sure that this type of publishing technical magazine will prove its mettle by providing an opportunity for bringing out the writing talent which bears immense potentiality of sharpening Students' communication skill as part of their over all personality development and also will direct their creativity to new dimensions of mature expression.

I congratulate all the contributors and the editorial board for bringing out such a technical magazine.

PROF. Dr. S. GEETHALAKSHMI

Dr. M.G.R.
EDUCATIONAL AND RESEARCH INSTITUTE
(DEEMED TO BE UNIVERSITY)
1A, 800 CHOI, (SRI-VEENAYAKA ROAD)
ENGINEERING COLLEGE
DENTAL COLLEGE & HOSPITAL



EDUCATION



RESEARCH



INNOVATION



EXCELLENCE

FROM THE RECTOR'S DESK



PROF DR. D.VISWANATHAN
RECTOR

It gives me great pleasure and so I extended my hearty congratulations to the Department of Civil Engineering for publishing Technical Magazine, **“CONTOUR 2022 - 2023”**.

An Expression of ideas and opinions through **“CONTOUR”** article shows our student's level of thinking and their high ability to learn from their surroundings.

My best wishes to the Department and editorial team for their dedication in making this magazine a reality. I hope this magazine continues to grow and represent the achievements of Dr. M.G.R Educational and Research Institute University and Civil Engineering Department.

PROF Dr.D.VISWANATHAN



EDUCATION



RESEARCH



INNOVATION



EXCELLENCE

FROM THE REGISTRAR'S DESK



Dr. C.B. PALANIVELU
REGISTRAR

Civil Engineering, one of the oldest Engineering, is a profession which has several related disciplines that deals with the design, construction, and maintenance of the built environment, including works like roads, bridges, canals, dams, and buildings.

It gives me great pleasure that Department of Civil Engineering is bringing out the Technical Magazine, "CONTOUR 2022-2023" to serve the Students, Faculties and Research scholars of our university and other institutions by giving their latest and technical matters related to Civil Engineering.

I am sure that this will create awareness and bring out innovative ideas about the enormous applications of Civil in the field of Engineering and other related disciplines.

At this juncture I congratulate every one for their team work to bring out this Magazine .

Dr. C.B. PALANIVELU



EDUCATION



RESEARCH



INNOVATION



EXCELLENCE

FROM THE JOINT REGISTRAR'S DESK \\ SENIOR PROFESSOR - CIVIL



Dr. T. FELIX KALA
JOINT REGISTRAR STUDENT AFFAIRS

I wish you all a safe and successful year 2022. This magazine is our symbol of enthusiasm and urge of knowledge in all fields of learning and blend of creativity and talents of our flourishing students. It is also very momentous way of projecting the inexhaustible quench of knowledge of our department.

And also portrays the latest advancements to the blend perfection of knowledge. At the juncture, I hereby take this opportunity to pass my good wishes to one and all of the staff members, Editorial board and student volunteers for their untiring effort to release this sound magazine very successful.

The word "THANKS" is not enough to convey our Department gratitude to our President Er.A.C.S. ArunKumar for his constant encouragement and support to achieve the goals of our department in a successful way.

Dr. T. FELIX KALA





Dr. M.G.R.
EDUCATIONAL AND RESEARCH INSTITUTE
UNIVERSITY
STRIVE TO EXCEL

FROM THE JOINT REGISTRAR'S INFRASTRUCTURE SENIOR PROFESSOR - CIVIL



Dr. S. ARIVAZHAGAN
JOINT REGISTRAR'S INFRASTRUCTURE
SENIOR PROFESSOR - CIVIL

It gives me great pleasure that Department of Civil Engineering is bringing out the Technical Magazine, "CONTOUR 2022-2023" to serve the Students, Faculties and Research scholars of our university and other institutions by giving them latest and technical matters related to Civil Engineering.

My best wishes to the Department and editorial team for their dedication in making this magazine a reality. I hope this magazine continues to grow and represent the achievements of Dr. M.G.R Educational and Research Institute University and Civil Engineering Department.

At this juncture I congratulate every one for their team work to bring out this magazine a reality.

Dr. S. ARIVAZHAGAN



EDUCATION



RESEARCH



INNOVATION



EXCELLENCE

FROM THE HOD'S DESK



Dr. T. KAVITHA

HEAD OF THE DEPARTMENT - CIVIL ENGINEERING

I am pleased to know that our Civil Engineering Department is once again successful in bringing their second issue of magazine "CONTOUR" for the academic year **2022-2023**.

The most important aspect we could derive from this stupendous effort is that it brings out the various technical and analytical skills of the budding engineers.

I also applaud the coordination and efforts behind the team to bring out this issue.

I wish them all success. Further I am glad to welcome students with more interest in bringing the article with more bright concepts and innovative ideas in the next issue.

I wish them to experience victory in all of their future endeavours.

Dr. T. KAVITHA



EDUCATION



RESEARCH



INNOVATION



EXCELLENCE



VISION

To foster competent Civil engineers for the development of sustainable built environment



MISSION

M 1

Equip students in contemporary Civil Engineering domains

M 2

Impart practical training to meet the industrial requirements and to inculcate research competency

M 3

Provide adequate skills to become successful entrepreneurs



PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

PEO :1

Analyze Civil Engineering problems and design appropriate solutions as per standards

PEO :2

Practice as a Civil Engineer towards creating a sustainable society

PEO :3

Enhance quality of entrepreneurship through software, communication and managerial skills





PROGRAM SPECIFIC OUTCOMES (PSOs)

PSO 1

Capacity to manage civil engineering projects with technical knowledge and professional skills



PSO 2

Graduates will be able to work effectively as an individual or in a team with good leadership skills in multidisciplinary environments to meet sustainability goals



P01

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



P02

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.



P03

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.



P04

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.



P05

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.



P06

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.



P07

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.



P08

Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.



P09

Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.



P010

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.



P011

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.



P012

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.





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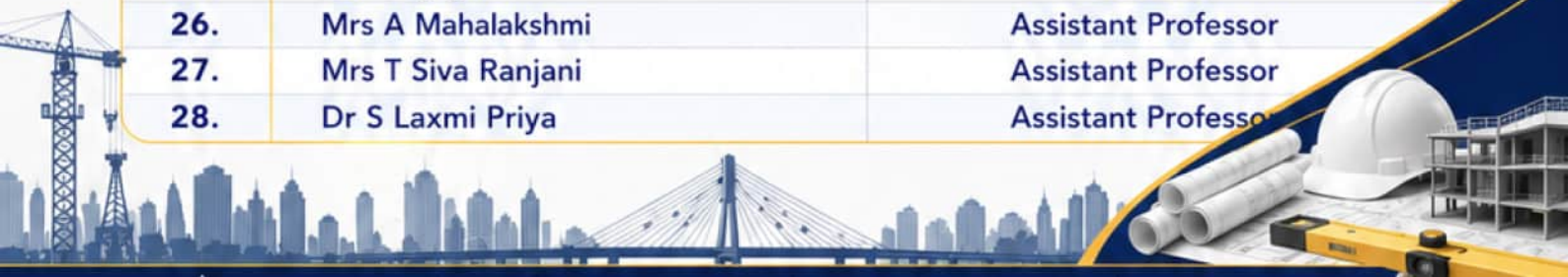


FACULTY OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF CIVIL ENGINEERING

FACULTY MEMBERS LIST

S.No	Name of the faculty	Present Designation
1.	Dr. Kavitha T	Professor and HoD
2.	Dr.Depaa RA. B.	Professor and Deputy HoD
3.	Mr.Mallikarjuna Reddy K	Professor
4.	Dr.Edwin D Thangam	Professor
5.	Dr.SethuramanV.S	Professor
6.	Dr.Arivalagan S	Professor
7.	Dr.T Felix Kala	Professor
8.	Dr. Arivumangai A	Professor
9.	Dr.Manikandan M	Professor
10.	Dr.Narmatha M	Professor
11.	Dr.Narayanan RM.	Professor
12.	Dr.Sudhakar R	Professor
13.	Dr. A Suresh	Assistant Professor
14.	Dr.Priyadarshini V	Associate Professor
15.	Ms.A.Hemamalinie	Assistant Professor
16.	Mr.Ramakrishna D	Assistant Professor
17.	Dr.E.Rani	Associate Professor
18.	Dr. Gomathi Nagajothy	Associate Professor
19.	Mrs.S.Kalpana	Assistant Professor
20.	Dr.M.K. Thangamani Bindu	Professor
21.	Dr M Vanathi	Professor
22.	Mr.Jayavelu.K.R	Assistant Professor
23.	Mrs V Saranya	Assistant Professor
24.	Dr V Manjula	Professor
25.	Dr B Vijaya	Professor
26.	Mrs A Mahalakshmi	Assistant Professor
27.	Mrs T Siva Ranjani	Assistant Professor
28.	Dr S Laxmi Priya	Assistant Professor





ISR EVENT REPORT

ROOFTOP RAINWATER HARVESTING



WORLD WATER DAY
22 MARCH

ON THE OCCASION OF **WORLD WATER DAY**

DATE
22.03.23

TIME
10.30 AM

VENUE
MOGAPPAIR

Organized by
DEPARTMENT OF CIVIL ENGINEERING
for the General Public



INAUGURATION BY

-  **Dr. C. B. Palanivelu**
Registrar
-  **Dr. Kalidoss**
Senior Additional Registrar
-  **Dr. G. Gopalakrishnan**
Provost
-  **Dr. P. S. Rajakumar**
Dean Activities
-  **Dr. T. Kavitha**
HOD – Civil Engineering
-  **Dr. RA. B. Depaa**
Deputy HOD – Civil Engineering

ABOUT THE EVENT

Mr. D. Ramakrishna, Assistant Professor and Event Organizer along with **Dr. M. Narmatha**, Professor and students of Civil Engineering visited various houses and areas in Mogappair and explained the importance of rooftop rainwater harvesting to the residents, police officers, traffic police, and general public with the help of pamphlets and flyers.



HIGHLIGHTS OF THE EVENT



Created Awareness on the importance of Rainwater Harvesting



Visited Houses, Shops, Institutions and Public Places in Mogappair



Interacted with Residents, Police Officers, Traffic Police & Public



Distributed Pamphlets and Flyers



Promoted Water Conservation for a Sustainable Future

“ Harvest Today...
Secure Tomorrow!
”



SAVE WATER • SAVE LIFE • BUILD A BETTER TOMORROW





METROPOLITAN CIVIL ENGINEERS ASSOCIATION MEETING

29TH APRIL 2023

7.00 PM

VIJAY PARK, ARUMBAKKAM



Uniting Professionals • Sharing Knowledge • Building Tomorrow

The Metropolitan Civil Engineers Association conducted its periodic meeting on 29th April 2023 at 7.00 PM, held at Vijay Park, Arumbakkam. The meeting served as a platform for civil engineering professionals to discuss current developments, share knowledge, and strengthen professional networking within the metropolitan region.



FROM OUR DEPARTMENT OF CIVIL ENGINEERING



Mr. Arivalagan Sir



Myself



Mr. Kumaran Sir

attended the meeting and **actively participated** in the discussions and deliberations held during the session.



At the conclusion of the meeting, our department **brochures** highlighting the academic programs, research activities, and achievements of the Department of Civil Engineering **were distributed** to all the participants.



This initiative helped in **promoting the department's visibility** among practicing civil engineers and fostering stronger industry-academia connections.



UNITING PROFESSIONALS • SHARING KNOWLEDGE • BUILDING TOMORROW

Together We Engineer Better Communities



AWARENESS PROGRAM ON UN SUSTAINABLE DEVELOPMENT GOALS AT CSI PRIMARY SCHOOL, REDHILLS

DATE : 03.04.2023 | VENUE : CSI PRIMARY SCHOOL, REDHILLS | BENEFICIARIES : SCHOOL STUDENTS

An awareness program on UN Sustainable Development Goals (SDGs) was conducted at CSI Primary School, Redhills, on 03.04.2023. Dr. L. Ramesh and Dr. V. Priyadarshini, Assistant Professors, Department of Civil Engineering (one of the Ensav Club Coordinators) educated students on the importance of SDGs and environmental sustainability.



- ### PROGRAM HIGHLIGHTS
- ✓ Introduced the concept of UN Sustainable Development Goals (SDGs) to school students.
 - ✓ Explained the significance of environmental sustainability and responsible living.
 - ✓ Encouraged students to contribute towards a better and sustainable future.



RESOURCE PERSONS



Dr. L. Ramesh
Dean EPA
Department of EEE
Department of EEE



Dr. V. Priyadarshini
Assistant Professor
Department of Civil Engineering
(Ensav Club Coordinator)

KEY TAKEAWAYS FOR STUDENTS

-  The world is facing many challenges that require collective action.
-  Small actions today can lead to a sustainable tomorrow.
-  Every individual has a role to play in achieving the SDGs.





Guest Lecture on “Project Management”

Dr.M.G.R.
Educational and Research Institute
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(An ISO Certified Institution)
University with Graded Autonomy Status
Maduravoyal, Chennai - 600 095

DEPARTMENT OF CIVIL ENGINEERING
WELCOMES YOU
FOR THE GUEST LECTURE
ON
"PROJECT MANAGEMENT"

Venue: SMART ROOM

20th January
2023

11:00AM-
12:30PM

Mrs.T.Aruna,M.Arch
Dharashaw and Co Private Limited
Company - Mumbai,
Project Office at
Puducherry

Mrs. Bini Mylin
Organising Secretary

Mrs.A.Hemamalinie
Dr.Gomathi Nagajothi.P
Association Conveners

Dr. T. Kavitha
Dept. Head



Guest Lecture on “Project Management” on 20th January 2023 between 11:00AM to 12:30 PM for the Civil Engineering students.

The Speaker of this session Ms. T. Aruna Team Leader and Urban Management Expert, Puducherry gave a very commendable lecture on the different stages of project management and Town Planning.

The students were encouraged to enter into the field of town planning and to take up Government opportunities in these sectors.

The students actively participated in this program with lot of interaction and involvement.

EVENTS

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F.No.10/2019, High Road, Chinnai-95, Tamil Nadu, India.

A+ NAAC
NBA NATIONAL BOARD OF ACCREDITATION

DEPARTMENT OF CIVIL ENGINEERING
(ASSOCIATION OF CIVIL ENGINEERS)
PROUDLY PRESENTS

TECHNICAL EVENTS

- PITCH PRESENTATION
- CADD CONTEST
- QUIZ CONTEST
- DRAWING - GREEN BUILDING

NON-TECHNICAL EVENTS

- MUSICAL CHAIR
- BALLOON FUN
- DUMB CHARADES
- TREASURE HUNT
- PS4 (FIFA)

AAKRITI '23'
A NATIONAL LEVEL TECHNICAL SYMPOSIUM
"Green Energy"
On
SEPTEMBER 22nd 2023

STUDENT CO-ORDINATORS
Nooruz Zoha - 7546872974
Siranjeevee S - 9790749600
Dhanush Raj N - 8778570858
MD Fahimuddin - 7079988156

STAFF CO-ORDINATORS
Dr.M.NARMATHA-7708425196
Er.A. HEMAMALINIE-7845573601

For Registration

aakriti.civildepartment@gmail.com

• MGR CIVIL DEPT
• AAKRITI_CIVIL
 • MGR CIVIL DEPT
• AAKRITI_CIVIL
 • DR MGR CIVIL DEPT
• AAKRITI CIVIL
 DR MGRER CIVIL DEPARTMENT

Dr. M.G.R. EDUCATIONAL AND RESEARCH INSTITUTE
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(ASSOCIATION OF CIVIL ENGINEERS)
Organized

AAKRITI '23'
A NATIONAL LEVEL TECHNICAL SYMPOSIUM
On
'Green Energy'

Mr. PABBA RAMESH
Sr.Faculty - ACE Engineering Academy

STUDENT CO-ORDINATORS
Nooruz Zoha
Siranjeevee S
Dhanush Raj N
MD Fahimuddin

STAFF CO-ORDINATORS
Dr.M.NARMATHA-7708425196
Er.A. HEMAMALINIE-7845573601
civil2events@gmail.com

September 22nd 2023

• MGR CIVIL DEPT
• aakriti civil
 • mgrcivildept
• aakriti civil
 • DrMgr Civil Dept
• Aakriti civil
 DrMGRER CIVIL DEPARTMENT

CAREER GUIDANCE FOR GATE

Dr. M.G.R. EDUCATIONAL AND RESEARCH INSTITUTE
(DEEMED TO BE UNIVERSITY)
(An ISO Certified Institution)

Ref:Dr.M.G.R/DUC/2022-2023/253 Date: 24.08.2022

Circular

In order to encourage more number of Engineering and Technology students to clear GATE examination, university authorities have decided to provide gate study material (Book) in subsidized price. The study material (Book) worth of Rs.1,125/- is available for Rs.400/- for our students. Hence interested students can avail the above facility by registering with their department Gate Academy Coordinator on or before 27-08-2022.

Job Opportunity for GATE qualified Student

The following undertaking recruiter thousand of Engineer every year MDL, BPCL, GAIL, NLC LTD, CEL, Indian Oil, HPCL, NBPC, NECC, BHEL, WBSEDCL, NTPC, ONGC, Oil Indian, Power Grid, Cabinet Secretariat, Govt. of India, BAARC, NFL, IPR, PSPCL, PSTCL, DRDO, OPGC Ltd., THDC, Indian Ltd., BBNL, RITES, IRCON, GHECL, NHAI, KRIBHCO, Mumbai Railway Vikas Corporation Ltd.(MRVC Ltd.), National Textiles Corporation, Coal India Ltd., BNPB, AAL, NALCO, EdCIL India.

Financial Assistance from Ministry of Education
A valid GATE score will get Rs. 12,400/- per month for M.Tech. and Rs. 24,900/- for Ph.D.

Cash benefits from our Institution:

1. If the GATE percentile score is 91% - 100% - 2 sem fees wavier.
2. If the GATE percentile score is 81% - 90% - 1 sem fees wavier.
3. If the GATE percentile score is 71% - 80% - Rs. 25,000/-.

Hence, Students are advised to start preparing for the GATE Examination from the Second Year onwards. During the third and final year they can write the examination.

Dr. RAJ.Depaa of Civil Department (IIT PALS coordinator) will be the point of contact for the GATE Academy activities.

C. B. P. REGISTRAR

Copy to:

1. President / Secretary / VICE / SO - (For kind information)
2. VC / Provost / Bursar / ProVC / Sr. Adm. Registrar / Adm. Registrar
3. Joint Registrar / Dir. - Exam / CAE / Adm. Cofc
4. Sr. Director / Director/ Deans / Adm. Deans/Deputy Deans / Dean (PG) Lab
5. SR Halls - Male/Female Campus / Halls (PG) - ECE / Program (PG) - ECE / Adm. / AC. / Liaison Officers
6. Officers - Admission / Library / Accounts / Safety Incharge / Transport / Estate / Construction / Electrical Maintenance
7. Hostel / Bunk / Student Union Board / File

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DEPARTMENT OF CIVIL ENGINEERING

WELCOMES YOU

FOR THE PRE PLACEMENT TRAINING

SESSION ON

CAREER GUIDANCE FOR

CRACKING GATE EXAM

Venue: Smart Class Room, AK 104

26th August 2022 2.00-3.30PM

Mr. Pabba Ramesh
Sr.Faculty – ACE Engineering Academy

Mrs. Bini Mylin **Mrs.A.Hemamalini** **Dr. T. Kavitha**
Organising Secretary Association Conveners Dept. Head

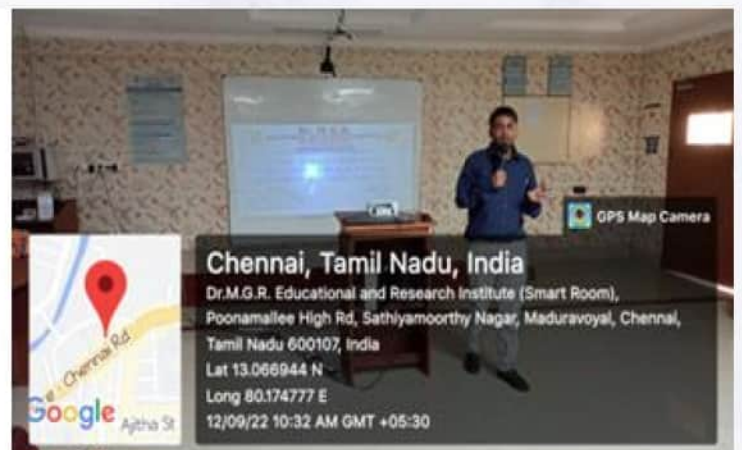
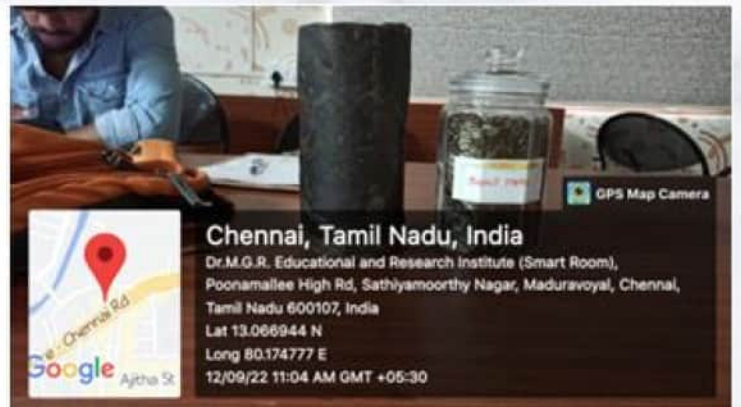
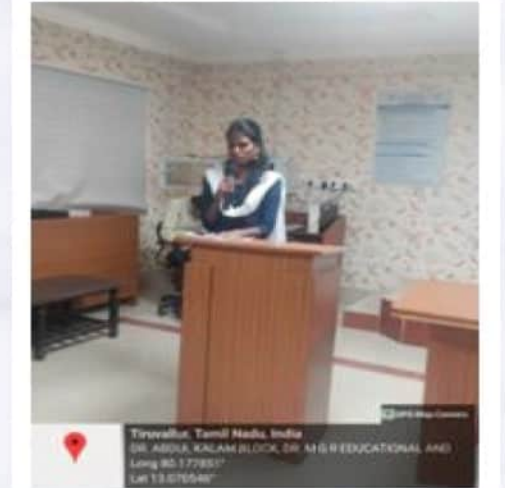
Career Guidance for cracking GATE Exam held on 26th August 2022 (2:00-3:30 PM).

Speaker: Mr. Pabba Ramesh, M.Tech, PhD, Sr. Faculty - ACE Engineering Academy.

Topics: GATE preparation steps, exam strategies, and Public Sector opportunities. B.Tech Civil Engineering students actively participated.



EVENTS









FDP ON WOMEN EMPOWERMENT 2.0



DAY 2.: FDP ON WOMEN EMPOWERMENT 2.0



FDP on Women Empowerment 2.0 was conducted by the Dept. of Civil Engineering.



Chief Guest: Vice Chancellor Dr. S. Geetha Lakshmi, who was felicitated with the "VEERAMANGAI" award.



Key Highlights: Professional life experiences, planning, time management, courage & health consciousness among women.



Other Speakers: Dr. Maline Pande (Addl. Registrar), Dr. T. Felix Kala (Joint Registrar), Dr. Suchitra (Dean - Events).



DAY 2

- ▶ The session commenced with a welcome address by Dr. T. Kavitha, Head of Civil Engineering.
- ▶ Dr. V. Priyadarshini introduced the guest speaker, Mrs. S. Padma Priya, Managing Trustee of Vidhai Vidaiyom.
- ▶ She was honored with the "VEERAMANGAI" Award for her outstanding contributions to environmental conservation, presented by Dr. S. Kalidoss, Senior Additional Registrar.



DAY 3

- ▶ The third day began with a welcome note by Dr. T. Kavitha.
- ▶ Dr. P. Gomathi Nagajothi introduced the chief guest, Mrs. T. Aruna, Urban Planning Management Expert, Government of Puducherry.
- ▶ In recognition of her excellence in urban planning, she was presented with the "VEERAMANGAI" Award by Dr. Felix Kala.



“ Empowered women build empowered communities and create a better tomorrow. ”

FIELD TRIP



EXPLORING NATURE,
LEARNING BEYOND CLASSROOM

📅 21.09.2022 to 23.09.2022

A three-day curriculum-based field trip was organized to Salem, Namakkal, Sithampooni, Kanjamalai, and Yercaud from 21.09.2022 to 23.09.2022.

During the visit, students gained practical exposure to mineral exploration, groundwater potential assessment through geophysical resistivity surveys, iron ore mineralization studies, and mining operations.

They learned field techniques such as measuring strike and dip using a Brunton compass, identified source rocks, and collected various mineral specimens including limonite, laterite, magnetite, chromite, and bauxite.

The students also visited TANMAG and TAMIN mining sites to understand open-cast and semi-mechanized mining methods.

collected 25 varieties of rock and mineral specimens and acquired valuable hands-on geological knowledge through field investigations.



🔍 Field study and observation



📐 Measuring strike and dip using Brunton compass

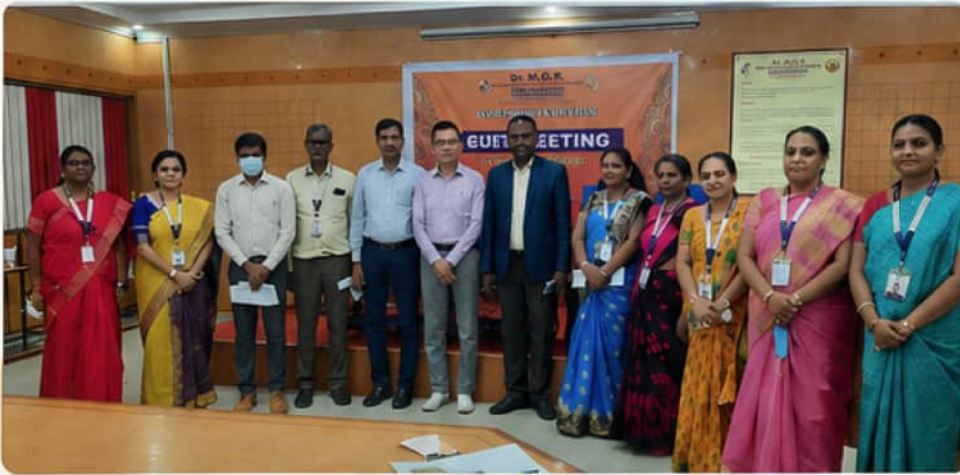


🚛 Open-cast and semi-mechanized mining



👥 Learning, Exploring & Growing Together

GUEST LECTURE



JAPANESE ENDOWED COURSE (JEC):

In October 2022, a meeting was held with Mr. Ko Shunkei of Hiyoshi Corporation, Japan, to discuss the Japanese Endowed Course (JEC) program and opportunities for joint research collaborations.



Organized by the **International Relations & Collaboration Cell** and **ISO Cell**, the initiative was designed to benefit students and faculty members from five departments by promoting international learning and academic cooperation.





37th INDIAN ENGINEERING CONGRESS



The Institution of Engineers (India)



37TH INDIAN ENGINEERING CONGRESS

The 37th Indian Engineering Congress, organized by The Institution of Engineers, was held at Le Meridien, Chennai.



On the second day (16.12.2022), the memorial lecture focused on Sustainable Development and Energy Conservation.



Distinguished speakers, including **Dr. R. Velraj**, Vice-Chancellor of Anna University, **Vikas Kumar**, Chairman of Delhi Metro, and **R.S. Sodhi**, Managing Director of Amul, shared valuable insights on the crucial role of engineers in promoting energy efficiency and sustainable development.

—• DISTINGUISHED SPEAKERS —•



Dr. R. Velraj

Vice-Chancellor
Anna University

Sustainable
Development and
Energy Conservation



Vikas Kumar

Chairman
Delhi Metro

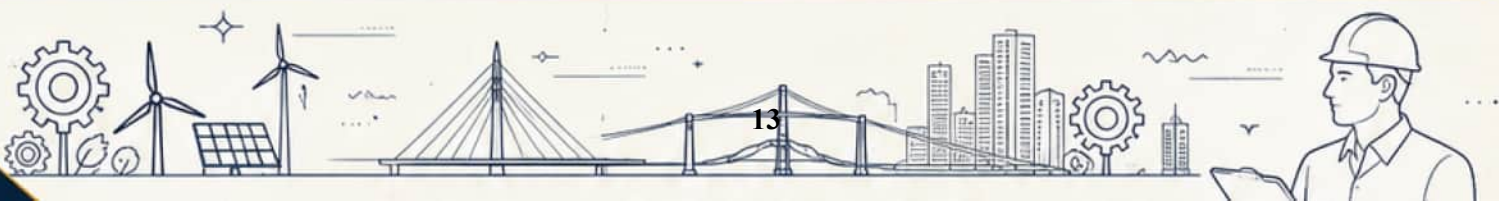
Innovations and
Sustainable Urban
Transport



R.S. Sodhi

Managing Director
Amul

Sustainability,
Innovation and
Nation Building



INAGURAL CEREMONY / ISR EVENT





Dr. M.G.R.
EDUCATIONAL AND RESEARCH INSTITUTE
DEEMED TO BE UNIVERSITY
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 Periyar E.S.S. High Road, Madhavaram, Chennai-60. Sundarabadi, India.

CENTRE FOR GREEN & SMART CAMPUS
 In association with
DEPARTMENT OF CIVIL & MECHANICAL ENGINEERING
 invites you for the inaugural ceremony of
INDIAN PLUMBING ASSOCIATION STUDENT CHAPTER I-071

WEDNESDAY | @ 11.00 AM
07 SEP 2022

VENUE : SEMINAR HALL (MAIN CAMPUS)

Inaugural Address Mr.A.JOSEPH MATHEW Chairman, IPA Chennai chapter	Special Address Dr.S.VIRAPAN National Executive Member, IPA
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Dr.RM.NARAYANAN , DEAN-GSC Dr.P.GOMATHI NAGAJOTHI , Dy.DEAN-GSC Dr.M.NARMATHA , Dy.Dean - GSC	Dr.T.KAVITHA , HoD-CIVIL Dr.K.RAJAN , HoD-MECH
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INAGURAL CEREMONY OF INDIAN PLUMBING ASSOCIATION STUDENT CHAPTER I – 071 7th Sept 2022, Seminar Hall, Main Campus.



DEPARTMENT OF CIVIL ENGINEERING
Online quiz competition for 12th students
 On
Artificial Intelligence and Machine Learning

Quiz Link
<https://forms.gle/e9NMHwPRWJ3UcRWSA>

100% PLACEMENT 2021-2022

Quiz link open From 03rd July 2022@ 6pm
 till 15th July 2022@ 6pm

Win Exciting Prizes

E- Certificate for all participants

B .Tech Civil Engineering
 with Specialization in
**Artificial Intelligence and
 Machine Learning**

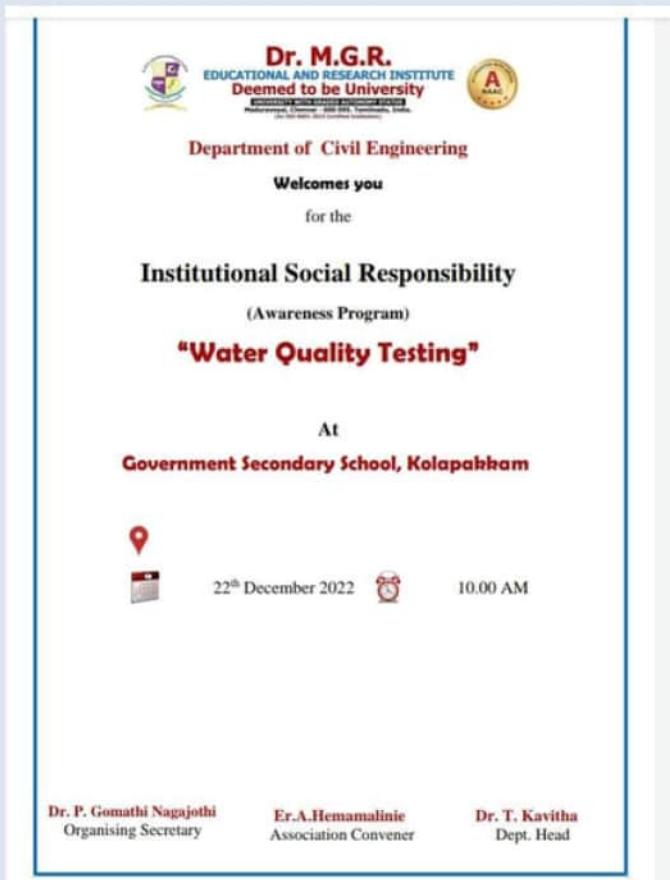
ADMISSIONS OPEN 2022-23

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ISR EVENT - School Program – Online Quiz Competition on AI and Machine Learning

DATE: 3rd Jul 2022 till 15th Jul 2022



Dr. M.G.R.
EDUCATIONAL AND RESEARCH INSTITUTE
Deemed to be University

Department of Civil Engineering
Welcomes you
for the
Institutional Social Responsibility
(Awareness Program)
"Water Quality Testing"

At
Government Secondary School, Kolapakkam

22nd December 2022 10.00 AM

Dr. P. Gomathi Nagajothi
Organising Secretary

Er.A.Hemamalinie
Association Convener

Dr. T. Kavitha
Dept. Head



An ISR activity on Water Quality Testing Awareness was conducted on 22.12.2022 for students of Government Higher Secondary School, Kolapakkam. Dr. R.M. Narayanan educated students on the importance of water quality testing and demonstrated the measurement of pH, TDS, DO, residual chlorine, and iron content using testing kits. Final-year and third-year students actively participated and distributed awareness pamphlets to the local community.



EMERGING TRENDS IN SUSTAINABLE INFRASTRUCTURE DEVELOPMENT



Civil Engineering is a profession that directly contributes to the development of society through the planning, design, construction, and maintenance of infrastructure. As a Civil Engineering student, I am fascinated by how engineering solutions improve transportation, water resources, housing, and environmental sustainability.



Today, the construction industry is rapidly evolving with the adoption of modern technologies such as **Building Information Modeling (BIM)**, **Geographic Information Systems (GIS)**, **Artificial Intelligence (AI)**, and **smart construction techniques**. These innovations help engineers enhance project efficiency, reduce costs, and improve the quality of infrastructure projects.



One of the most important areas of focus in modern Civil Engineering is **sustainability**. Sustainable infrastructure aims to minimize environmental impacts while ensuring long-term economic and social benefits. **Green buildings**, **energy-efficient structures**, **recycled construction materials**, and **rainwater harvesting systems** are becoming essential components of contemporary engineering practice.



Civil engineers also play a crucial role in addressing global challenges such as **climate change**, **urbanization**, and **water scarcity**. Through innovative solutions in transportation planning, environmental engineering, and disaster-resistant construction, engineers contribute significantly to creating safer and more resilient communities.



As a student of the Department of Civil Engineering, I continuously strive to enhance my technical knowledge and practical skills through academic learning, laboratory work, technical events, and project activities. The exposure to emerging technologies and industry practices prepares me to become a **competent professional** capable of contributing to the development of sustainable infrastructure.



I believe that the future of Civil Engineering lies in integrating **technology**, **innovation**, and **environmental responsibility**. By embracing these principles, we can create infrastructure that not only serves present needs but also preserves resources for future generations.

KEY EMERGING TRENDS



Building Information Modeling (BIM)



Geographic Information Systems (GIS)



Artificial Intelligence in Construction



Smart Infrastructure Systems



Green Building Technologies



Recycled Construction Materials



Rainwater Harvesting Systems



Climate-Resilient Infrastructure

STUDENT REFLECTION

“

The future of infrastructure development depends on sustainable engineering practices that balance economic growth, environmental protection, and social well-being.

”

“ **Civil Engineers build more than structures— they build the foundation for a sustainable future.** ”



By **RANAE RODERICK J**
Reg. No.: 201051101602
Department of Civil Engineering



Department of Civil Engineering







SUSTAINABLE CONSTRUCTION PRACTICES

Building a Better Tomorrow 

Sustainable construction focuses on designing and constructing infrastructural by minimizing environmental impacts and using resources efficiently throughout the life cycle of a project. It aims to create structures that are economically viable, environmentally responsible, and socially beneficial.

By adopting green materials, energy-efficient technologies, and innovative construction methods, civil engineers can contribute to a resilient and sustainable future.

TECHNICAL HIGHLIGHTS

-  Fly ash replacement in concrete reduces CO₂ emissions by up to 30%.
-  Green buildings can save 20–30% of energy and 30–50% of water.
-  Use of recycled aggregates can reduce natural resource depletion by up to 40%.
-  Sustainable practices reduce life cycle cost by 8–12%.

KEY SUSTAINABLE PRACTICES

-  **Use of Eco-friendly Materials**
Utilizing fly ash bricks, recycled aggregates, bamboo, and low-VOC materials.
-  **Energy Efficiency**
Optimized building orientation, natural lighting, insulation, and efficient HVAC systems.
-  **Water Conservation**
Rainwater harvesting, low flow fixtures, and water recycling systems.
-  **Waste Management**
Segregation, recycling of construction waste, and proper disposal methods.
-  **Green Building Certification**
Adoption of standards like IGBC, GRIHA, LEED to ensure environmental sustainability.

BENEFITS

-  Reduced Carbon Footprint
-  Lower Operating Cost
-  Healthier Living Environment
-  Improved Resource Conservation
-  Enhanced Durability and Value

APPLICATIONS

- Green residential and commercial buildings
- Sustainable infrastructure projects
- Eco-friendly roads and pavements
- Water-efficient landscaping and urban development



THE WAY FORWARD

Sustainable construction is not just an alternative, it is a necessity for the future. As civil engineering students and future professionals, it is our responsibility to adopt sustainable solutions and build infrastructure that meets today's needs without compromising the ability of future generations.

STUDENT CONTRIBUTORS

S. NO.	NAME	REGISTER NUMBER	ROLE
1.	Arjun Prakash	211051101781	Lead Writer & Research
2.	Nikhil Varma	211051101606	Content Development
3.	Leena Mary Thomas	211051101607	Technical Review
4.	Inao Shannan	211051101608	Design & Compilation





ARTIFICIAL INTELLIGENCE IN CIVIL ENGINEERING

Smart Technology for Smarter Infrastructure

Artificial Intelligence (AI) is revolutionizing the civil engineering industry by enhancing productivity, improving accuracy and enabling data-driven decision making throughout the life cycle of a project.

AI tools and algorithms help engineers analyze large datasets, predict outcomes, automate repetitive tasks, and optimize infrastructure performance for a smarter and more sustainable future.



APPLICATIONS OF AI IN CIVIL ENGINEERING



Project Planning & Scheduling



Structural Health Monitoring



Risk Assessment & Prediction



Construction Automation



Smart Traffic Management

TECHNICAL INSIGHTS

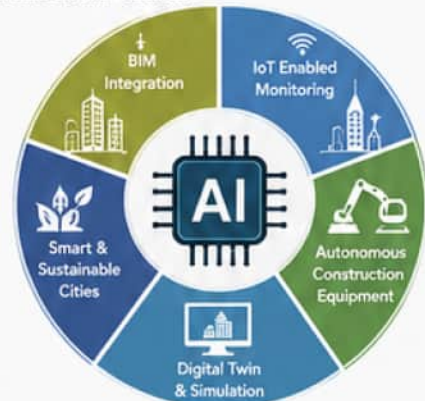
- Machine learning algorithms analyze historical project data to predict cost overruns with up to 90% accuracy.
- AI-based image recognition improves defect detection in structures by 70%.
- Drones with AI can monitor large sites and generate 3D models within hours.
- AI optimizes resource allocation, reducing delays by 20–25%.
- Natural Language Processing (NLP) assists in automatic report generation and documentation.

BENEFITS

- Improved Decision Making
- Enhanced Safety
- Time & Cost Savings
- Predictive Maintenance
- Better Risk Management

FUTURE SCOPE

AI, when combined with BIM, IoT and GIS, will lead to autonomous construction sites, smart infrastructure and resilient cities of the future.



STUDENT CONTRIBUTORS

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“ AI empowers engineers to build smarter, safer and more efficient infrastructure. ”



AI is not replacing engineers, but empowering them to engineer a better future.



RAINWATER HARVESTING: A SUSTAINABLE WATER SOLUTION

Conserve Water, Secure Future 

Rainwater harvesting is the simple technique of collecting and storing rainwater for future use. It helps in recharging groundwater, reducing flooding and conserving water resources.



HOW IT WORKS



TYPES OF RAINWATER HARVESTING



Rooftop Rainwater Harvesting

Collecting rainwater from rooftops and storing it for direct use or groundwater recharge.



Surface Runoff Harvesting

Collecting rainwater from open areas such as roads, parks and playgrounds and directing it to storage or recharge structures.

TECHNICAL BENEFITS



Increases groundwater level



Reduces urban flooding



Provides supplementary water supply









Low maintenance and cost effective



Promotes water conservation and sustainability

DESIGN CONSIDERATIONS

-  Annual rainfall – Higher rainfall increases the potential yield.
-  Roof area – Larger roof area provides more collection.
-  Runoff coefficient – Depends on roof material and slope.
-  Storage capacity – Size depends on requirement and rainfall.
-  Quality of water – Proper filtration ensures clean water.
-  Maintenance – Regular cleaning of roof, gutters and filters.

EXAMPLE OF RAINWATER HARVESTING SYSTEM



ESTIMATED IMPACT

-  Up to 50% reduction in demand for municipal water
-  Groundwater recharge increase by 20–40%
-  Reduces urban flooding significantly
-  Long-term savings on water bills



STUDENT CONTRIBUTORS

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1.	Jagannath G.	211051101613	Lead Writer & Research
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Every drop collected today is a step towards a water-secure tomorrow.





SMART CITIES AND URBAN DEVELOPMENT

Building Intelligent and Sustainable Cities

Smart cities integrate physical infrastructure with digital technologies to improve the quality of life, ensure efficient services and promote sustainable urban development.

By leveraging data, connectivity and innovation, smart cities create a future-ready urban ecosystem.



KEY COMPONENTS OF SMART CITIES



TECHNOLOGIES INVOLVED



BENEFITS



CHALLENGES

- High initial investment
- Data security and privacy
- Interdepartmental coordination
- Continuous maintenance and monitoring

STUDENT CONTRIBUTORS

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APPLICATIONS OF SMART CITIES



THE FUTURE OF SMART CITIES

The future lies in creating resilient, inclusive and sustainable cities that leverage technology for the betterment of communities and the environment.



“ Smart infrastructure creates smarter communities. ”





INNOVATIONS IN TRANSPORTATION ENGINEERING

Driving the Future of Mobility

Innovations in transportation engineering aim to develop safe, efficient, sustainable and intelligent transportation systems to meet the growing demands of urbanization and mobility.



KEY INNOVATIONS



Intelligent Transportation Systems (ITS)
Real-time traffic monitoring, adaptive signals and smart parking.



Sustainable Pavement Technologies
Use of recycled materials, warm mix asphalt and permeable pavements.



Electric and Green Mobility
EV infrastructure, charging stations and promotion of public transport.



Automated and Connected Vehicles
Enhances safety, reduces human error and improves traffic flow.



Advanced Construction Techniques
Use of BIM, drones, prefabrication and 3D printing for faster construction.

TECHNICAL INSIGHTS



ITS can reduce traffic congestion by 20–30% through real-time data.



Permeable pavements reduce surface runoff by 40–60%.



EV adoption can cut greenhouse gas emissions by up to 50%.



Automated systems improve road safety and reduce accidents.

FUTURE TRENDS



Hyperloop Technology



Smart Highways



Drone Based Monitoring



Integrated Multi-modal Transport

IMPACT ON SOCIETY



Improved road safety and reduced accidents



Reduced travel time and improved connectivity



Lower environmental impact and sustainable development



Cost savings in construction and maintenance



Enhanced quality of life and economic growth

APPLICATION AREAS

- Urban transportation planning
- Highway and expressway projects
- Public transportation systems
- Traffic management and control
- Airport, metro and rail infrastructure
- Smart parking and logistics



STUDENT CONTRIBUTORS

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1.	Franklin Anbu Raj B	211051101621	Lead Writer & Research
2.	Ananth S	211051101622	Content Development
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SUSTAINABLE GOALS SUPPORTED



THE WAY FORWARD

The future of transportation lies in innovation, integration and sustainability. By embracing advanced technologies and sustainable practices, transportation engineers can build smarter, safer and more efficient mobility systems for a better tomorrow.







GUEST LECTURE



**Department of Civil Engineering organized
an Inter-Disciplinary Lecture Titled
“How to Develop App for Entrepreneurs”
on 23rd February 2023 @ 10.00 am**



Industry Institute Planning Cell in association with department of Civil Engineering organised an Industrial Visit in Casagrande construction site at Manapakam on 19.4.23 for Civil Engineering students.

Students gained practical knowledge of reinforcement detailing of column, beams and slabs. They also learnt the new plastering techniques with gypsum.

The engineers from the site explained in detail about foundation of the that four-storey structure and the execution patterns and planning schedule of the project.

SUSTAINABLE CONSTRUCTION PRACTICES



Sustainable construction has become an essential aspect of modern **Civil Engineering**. It focuses on designing and constructing infrastructure while minimizing environmental impacts and maximizing resource efficiency.



Green buildings, energy-efficient materials, rainwater harvesting systems, and waste management techniques are widely adopted to promote sustainable development.



RAINWATER HARVESTING



Civil engineers play a crucial role in creating environmentally responsible infrastructure that supports economic growth while preserving natural resources.



ECO-FRIENDLY MATERIALS



WASTE MANAGEMENT



The adoption of sustainable practices not only **reduces construction costs** in the long term but also improves the **quality of life** for future generations.



“Building sustainably today ensures a greener tomorrow.”





NEWSLETTER

STUDENT COORDINATORS



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