



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 : 2019 Certified Institution)

An ISO Certified Institution



FACULTY OF ENGINEERING AND
TECHNOLOGY

DEPARTMENT OF CIVIL ENGINEERING



CIVIL CONTOUR

2024 - 2025



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 2024 - 2025"

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

Dr. M.G.R.
EDUCATIONAL AND RESEARCH INSTITUTE
UNIVERSITY
SKOINERINO COLLEGE
DENTAL COLLEGE & HOSPITAL



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 published its Technical Magazine **CONTOUR 2024 - 2025**.

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



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 2024 - 2025”**.

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 2024-2025" 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 2025. 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



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 2024-2025" 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





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

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 2024-2025.

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



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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. Sethuraman V.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. Hemamalini	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



PUBLICATION DETAILS

Year	Publications	Book Chapter	Conference	Journal
2024-25	24	-	5	19

PUB ID	AUTHORS	HOME AUTHORS	HOME AUTHOR DEPARTMENT	PUBLICATION TITLE	SOURCE PUBLICATION	LEVEL	ARTICLE TYPE	YEAR	MONTH
147165	P Vasanthi, Vijaya Bhoopathy, S Senthil Selvan, A Bhaskar, B Amrutha, M	Vijaya Bhoopathy	Civil Engineering	Data Analytics on the Nano Composite Behavior of Circular CFST Columns under Axial Load	2023 International Conference on Data Science, Agents & Artificial Intelligence (ICDSAAI)	International	Conference	2024	3
147166	R Gowri, P Vasanthi, R Swathi Rekha, Vijaya Bhoopathy, S Karthikeyan,	Vijaya Bhoopathy	Civil Engineering	Machine Learning - Based Prediction of Compressive Strength Analysis	2023 International Conference on Data Science, Agents & Artificial Intelligence (ICDSAAI)	International	Conference	2024	3
147167	P Vasanthi, S Senthil Selvan, M Priyanka, Vijaya Bhoopathy, R Swathi Rekha,	Vijaya Bhoopathy	Civil Engineering	Comparative Study on Corrosion Damage Analysis Using FEM with ACO	2023 International Conference on Data Science, Agents & Artificial Intelligence (ICDSAAI)	International	Conference	2024	3
147194	Depaa Rani Balachandran, Haruna Ibrahim, Anand Verma, Vinay Kumar Singh,	Depaa Rani Balachandran	Civil Engineering	The recent progress in the advancement and efficiency of recycled steel fibre for concrete - a review	AIP Conference Proceedings	International	Conference	2024	8
147232	G Nirmala, Yeddala Prasanthi, L P Sajitha, P Ramesh Babu, N	S Laxmipriya	Civil Engineering	Latency Reduction In Industrial Iot Using Yolov8 CNN Approach For Real-Time Data Processing	2024 15th International Conference on Computing Communication and Networking Technologies	International	Conference	2024	11
150950	Suresh, Narayanan R.M	R.M Narayanan,Suresh	Civil Engineering	Evaluation Of Shoreline Changes Around Northern AndSouthern Chennai Harbor Using Historical Satellite Data And Geospatial Approaches Along Coastal	Migration Letters	International	Journal	2024	2
150952	Suresh A, R.M Narayanan	A Suresh,R.M Narayanan	Civil Engineering	Micro-Level Experimentation And Application Of Geospatial Methods For Rejuvenation Of Cooum Microwatershed	Migration Letters	International	Journal	2024	2
150953	R.M Narayanan, Laxmipriya S, Benedict Rosario C	Benedict Rosario C,R.M Narayanan,S Laxmipriya	Civil Engineering	Assessment Of Vehicle Emissions Associated With The Covid-19 Pandemic In Parts Of Greater Chennai Regime	Migration Letters	International	Journal	2024	2
150990	A Paulmakesh, A Arivalagan	A Arivalagan,A Paulmakesh	Civil Engineering,Not Available	Artificial Intelligence Methods For Building Analysis And Design In Structural Engineering	International Journal Of Progressive Research In Engineering Management And Science	National	Journal	2024	3
151004	N Rushwanth Chowdary, Soundararajan Arivalagan, M Ruben Pradeep	N Rushwanth Chowdary,Soundararajan Arivalagan	Civil Engineering	Effect of Zinc Ion in Water on Properties of Ordinary Portland cement Concrete	International Research Journal on Advanced Engineering and Management	National	Journal	2024	3
151011	Magli Vetrivelou, M Aruljothi, Vijaya Bhoopathy, Gokulakrishnan Janarthanan	Vijaya Bhoopathy	Civil Engineering	An Experimental Investigation on the Bacterial Concrete as an Innovative Approach to Self Crack Healing System	Materials Science Forum	International	Journal	2024	4

151017	M Renga Ramanujam, V Manjula	M Renga Ramanujam, V Manjula	Civil Engineering	Design Aspects and Energy Efficiency of Green Buildings	International Journal of Scientific Research & Engineering Trends	National	Journal	2024	3
151024	A Paulmakesh, Soundararajan Arivalagan	A Paulmakesh, Soundararajan Arivalagan	Civil Engineering	Evaluation of Building Structural Stability by Using Rebound Hammer Test	International Journal of Scientific Research & Engineering Trends	National	Journal	2024	3
151025	P Pratih, Mahendran Narmatha	Mahendran Narmatha, P Pratih	Civil Engineering	Sustainable Materials of Innovative Construction Techniques in Green Building	International Journal of Scientific Research & Engineering Trends	National	Journal	2024	3
152273	S Laxmipriya, M Naresh Babu, M Dinesh Babu, Yuvarajan Devarajan, J	S Laxmipriya	Civil Engineering	Decentralized Emission Inventories and Traffic Dynamics: A Comprehensive Study on PM _{2.5} and PM ₁₀ in the Road Sector of Greater Chennai	Aerosol Science and Engineering	International	Journal	2024	8
152297	Hemalatha B, M C Sashidkumar, Vivek S, Ramesh S, M Dinesh Babu,	S Laxmipriya	Civil Engineering	Experimental study of biodegradability of organic waste with industrial waste combined with effluents: A comparison by vermicomposting technology	Global Nest Journal	International	Journal	2024	1
152345	K B Ramesh, Muniyandi Manikandan	K B Ramesh, Muniyandi Manikandan	Civil Engineering	DEVELOPING THE MODEL OF CONSTRUCTION SAFETY AT SITE	International Journal Of Progressive Research In Engineering Management And Science	National	Journal	2024	0
152831	C P Shirley, A Priya, R Sarala, Rajdeep Singh Solanki, Depaa Rani	Depaa Rani Balachandran	Civil Engineering	Hybrid Technique-based Optimal Energy Management in Smart Home Appliances	IEIE Transactions on Smart Processing and Computing		Journal	2024	11
152855	S Srikanth Reddy, Ujval J Solanki, Kolla Naga Sreenivasa Rao, Ashok	Arivumangai Anbazhagan	Civil Engineering	Experimental Investigations On High Performance Fiber Reinforced Concrete Under Various Loading	Login Library Progress International	National	Journal	2024	0

154428	S Kasilingam, Arivumangai Anbazhagan	Arivumangai Anbazhagan, S Kasilingam	Civil Engineering, Not Available	A Comparative Study Of Different Strength For Different Mixer By Using Fly Ash, Quarry Dust And 10Mm Coarse Aggregate	International Journal Of Progressive Research In Engineering Management And Science	National	Journal	2024	3
154430	K S Anantha Krishnan, Adhula Hema Malini	Adhula Hema Malini, K S Anantha Krishnan	Civil Engineering	Experimental Investigation Of Concrete Beam Using Bubble Deck Technology	International Journal of Research and Analytical Reviews	National	Journal	2024	0
154431	A Allwin Jeenu Bhaskaran, Depaa Rani Balachandran	A Allwin Jeenu Bhaskaran, Depaa Rani Balachandran	Civil Engineering, Not Available	A Review Of Structural Failures And Remedial Measures	International Journal Of Progressive Research In Engineering Management And Science	National	Journal	2024	3
154433	Allwin Jeenu Bhaskaran, Depaa Rani Balachandran	Allwin Jeenu Bhaskaran, Depaa Rani Balachandran	Civil Engineering	A Review of Strengthening the Structural Elements for Stability Using Jacketing Techniques	International Journal of Scientific Research and Engineering Trends	National	Journal	2024	0
154434	S Kasilingam, Arivumangai Anbazhagan	Arivumangai Anbazhagan, S Kasilingam	Civil Engineering	Analysis and Design of G+9 Educational Building Using Etabs	International Journal of Scientific Research and Engineering Trends	National	Journal	2024	4

VARIOUS CONSULTENCY WORKS CARRIED OUT IN- MINJUR, THIRUVERKADU, POONAMALLEE





DEPARTMENT EVENTS

TITLE OF THE EVENT

Guest Lecture on Estimation and billing techniques Engineering

DATE

29.07.24

Venue SMART

ROOM



TITLE OF THE EVENT

Interdisciplinary Lecture Role of AI in modern in Civil Engineering

DATE

20.08.24

Venue SMART

ROOM



TITLE OF THE EVENT

Professional Society Event -Presentation on standards of Building materials-
BIS

DATE

08.11.24

**Venue SMART
ROOM**



TITLE OF THE EVENT

Subject lecture on Open Channel Flow- IV yrBIS

DATE

29.06.24

Venue SMART

ROOM



TITLE OF THE EVENT

Technology talk on emerging trends in civil Engineering

DATE

14.8.24

Venue

HPC Lab



TITLE OF THE EVENT

Technology talk on emerging trends in civil Engineering

DATE

08.11.24

**Venue SMART
ROOM**



TITLE OF THE EVENT

Symposium Recent trends in Civil Engineering

DATE

11.11.24

Venue SMART

ROOM



TITLE OF THE EVENT

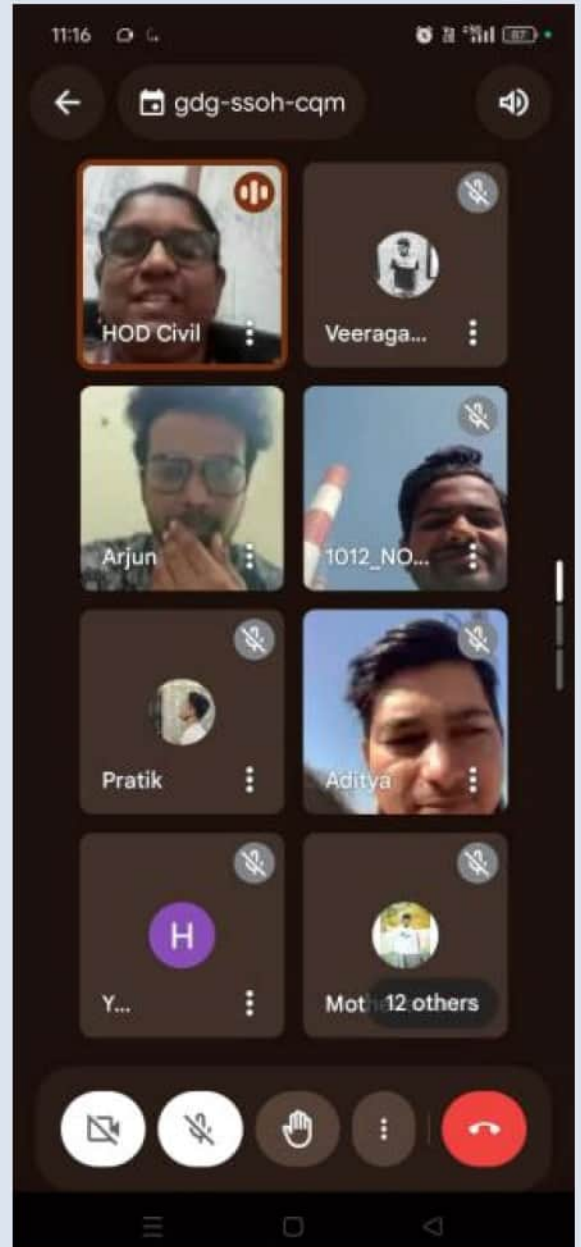
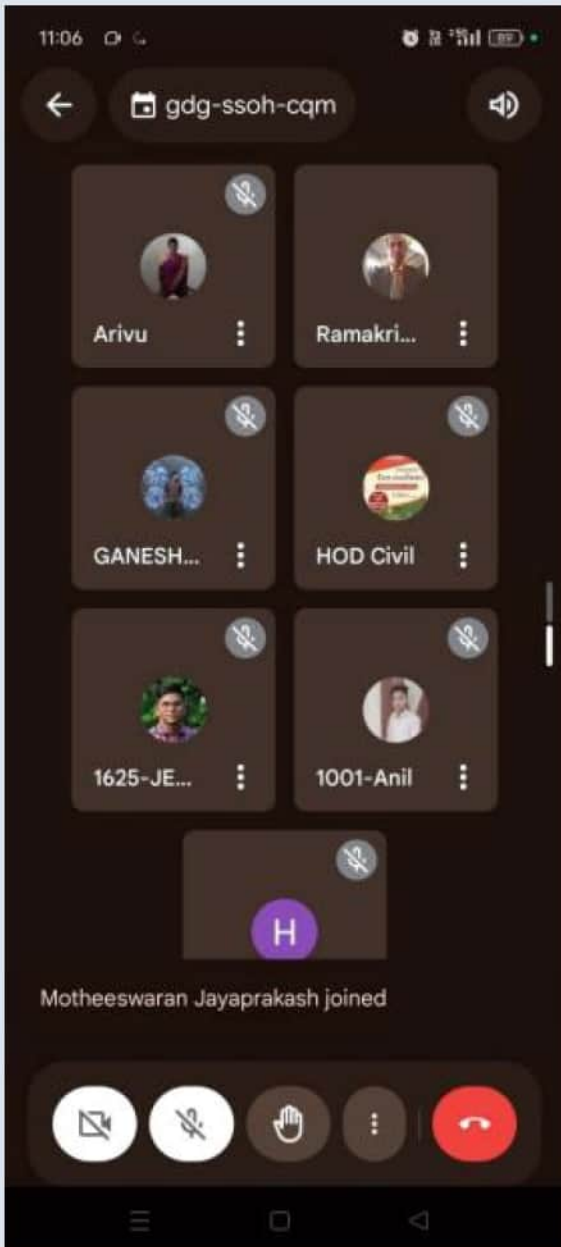
Alumni meet -Blooming Memories- 24

DATE

14.12.24

Venue Online

mode



TITLE OF THE EVENT

Subject lecture on Building Technology and Habitat Engineering- III y

DATE

29.10.24

**Venue SMART
ROOM**




RESEARCH MEETING - 03



Dr. M.G.R.
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A+
NAAC



Sir.
C.V.Raman
Research Council

SIR C V RAMAN RESEARCH COUNCIL
Department of Civil Engineering
VISHWESWARIAH RESEARCH FORUM

RF Meeting: 013 QUARTER NO: Q3



Dr.N.Jayachitra
Professor & Head
Dept. of Chemical Engineering
Dr.M.G.R.Educational and
Research Institute

Topic-
Patent Drafting
10.12.2024@11.15AM
Venue: Civil Smart
Room

Agenda:

- 1) *Presentation & Discussion of Featured Article*
- 2) *MGRPUBLISH999CHALLENGE Progress Review*
- 3) *External Member Tips for Publication*
- 4) *My Best Experience in Publication*
- 5) *Open Forum Discussion to Clarify the Member Queries*
- 6) *AoB*

Mr.D.Ramakrishna
Assistant Professor
Research Forum Coordinator

Dr.T.Kavitha
Department Head

WORKSHOP ON ADVANCED IN CIVIL ENGINEERING

DATE: 28-08-2024 TO 02-09-2024



The poster features logos for NBA (National Board of Accreditation) and Dr. M.G.R. Educational and Research Institute. The main text reads: 'DEPARTMENT OF CIVIL ENGINEERING ORGANISES WORK SHOP ON ADVANCED SURVEY IN CIVIL ENGINEERING'. It mentions 'Industrial collaboration with AJ LAND SURVEY'. A list of topics includes: DGPS & Total Station Survey, Contour Survey, Topographic Survey, Drone Survey, Site & Column Marking, and Volume Calculation. The event is held at Dr.M.G.R.Educational & Research Institute from 28-08-2024 to 02-09-2024. Social media handles for DrMgr Civil Dept are provided at the bottom.

DEPARTMENT OF CIVIL ENGINEERING
ORGANISES
WORK SHOP ON
ADVANCED SURVEY
IN
CIVIL ENGINEERING

Industrial collaboration
with
AJ LAND SURVEY

- ✓ DGPS & Total Station Survey
- ✓ Contour Survey
- ✓ Topographic Survey
- ✓ Drone Survey
- ✓ Site & Column Marking
- ✓ Volume Calculation

Dr.M.G.R.Educational & Research Institute
28-08-2024 to 02-09-2024

FOLLOW US ON: [f](#) [i](#) [x](#) [v](#) / DrMgr Civil Dept



INDUSTRIAL VISIT TO PHASE II CAMPUS



DATE : 02.8.24

The Department of Civil Engineering organized an industrial visit for B.Tech Civil Engineering III Year students to the SLMCH Construction Site, Adayalampattu.

The visit provided practical exposure to ready-mix concrete quality testing, concreting processes, reinforcement detailing, pile foundations, soil exploration, and retaining wall construction, enabling students to gain valuable hands-on experience in real-world construction practices.

**INTERNATIONAL SEMINAR ON HIGHER EDUCATION
& SCHOLARSHIP OPPORTUNITIES IN TUM ASIA &
GERMAN INSTITUTE OF TECHNOLOGY**

DATE : 08.08.2024



The Department of Civil Engineering, in collaboration with the International Relations and Collaboration Cell, organized an International Seminar on Higher Education and Scholarship Opportunities at TUM Asia on 08.08.2024. The session, delivered by Ms. Lenny Christina, Admission Advisor for India and ASEAN Region, provided insights into international academic programmes, scholarships, admission requirements, research opportunities, internships, and specialized courses, helping students explore higher education opportunities abroad.

SEWAGE TREATMENT PLANT(STP) - NESAPAKKAM ON 02.08.2024



The Department of Civil Engineering organized an industrial visit for B.Tech Civil Engineering final-year students to the Sewage Treatment Plant (STP), Nesapakkam.

The visit provided practical insights into wastewater treatment processes, modern treatment technologies, and environmental sustainability, helping students bridge the gap between theoretical knowledge and real-world civil engineering applications.

MGRERI & ECSA-NRSC FOR SAGAR MANJUSHA CRUISE



STUDENTS CORNER

THE FUTURE OF HOUSING: 3D PRINTING HOMES

WHAT IS 3D PRINTING IN CONSTRUCTION?

3D printing, also known as additive manufacturing, is the process of creating three-dimensional objects from a digital file by layering materials in successive layers. In construction, large-scale 3D printers use specialized materials like concrete, plastics, or other composites to create entire buildings, including homes. The printer is controlled by software that dictates the shape, size, and structure of the house, allowing for the creation of complex designs with precision.

How Does 3D Printing a House Work?

User Generated Content refers to any form of content—text, images, videos, reviews, etc.—created by individuals rather than brands or organizations. It is authentic, reliable, and often resonates deeply with audiences due to its personal nature. As a UGC creator, you have the freedom to explore your interests, share your experiences, and engage with communities across various digital platforms.



BENEFITS OF 3D PRINTED HOMES:

Affordability: Reduced labor and material costs make homes more affordable, potentially cutting construction costs by up to 50%.

Speed: Homes can be built in a matter of days or weeks, significantly reducing construction time compared to traditional methods.

Customization: 3D printing allows for unique and complex designs, offering high flexibility in architecture and layout without the need for expensive molds.

Sustainability: Less material waste and the ability to use eco-friendly materials, like recycled plastics, reduce the environmental impact of construction.



THE FUTURE OF 3D-PRINTED HOMES

The potential of 3D-printed homes goes beyond affordability and efficiency. As the technology advances, we may see entire neighborhoods or cities built with 3D printers, especially in regions that face housing crises or natural disasters. In some developing countries, 3D printing could provide an affordable solution for building homes quickly, while also allowing for customization to fit the local culture and environment.

In the long term, 3D printing could also play a significant role in the construction of sustainable and self-sufficient homes. For example, homes could be designed with integrated solar panels, water collection systems, and energy-efficient insulation, reducing the overall environmental impact.

CONCLUSION

3D printing technology has the potential to revolutionize the way we build homes, offering a more affordable, sustainable, and efficient alternative to traditional construction methods. While there are still challenges to overcome, the progress made so far is promising, and as the technology continues to develop, we can expect to see more 3D-printed homes in the future. Whether it's combating housing shortages, reducing environmental impact, or creating customized living spaces,

MANISH KUMAR (2 YEAR)

PLACEMENT



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Postage E.S.S. High Road, Madhavipuram, Chennai 60, Tamil Nadu, India.



**Department of Placement and Training
Welcomes
Campus Hiring FY 2025**



J&F
INDIA PRIVATE
LIMITED

J&F India Private Limited is an engineering consultancy that provides services for buildings and infrastructure. They are based in Chennai, India, and have been in business since 1999.

Eligibility : B. tech (civil)
Year of Passing : 2025

Position: Intern

Name of Department	Number of students
B.tech (civil)	12
Total	12

All the Best !!

DR. C. Balakrishnan
Dean- Placement & IIPC
9841199624
placement@drmgrdu.ac.in

Date : 23-04-2024

Venue :J&F India pvt ltd.

Radiance Towers, 3rd Floor Old No.

110, New No. 111,

33 Feet Road, Anna Salai, Guindy.

Chennai - 600 032

PUBLICATION DETAILS

Year	Publications	Book Chapter	Conference	Journal
2024-25	24	-	5	19

PUB ID	AUTHORS	HOME AUTHORS	HOME AUTHOR DEPARTMENT	PUBLICATION TITLE	SOURCE PUBLICATION	LEVEL	ARTICLE TYPE	YEAR	MONTH
147165	P Vasanthi, Vijaya Bhoopathy, S Senthil Selvan, A Bhaskar, B Amratha, M	Vijaya Bhoopathy	Civil Engineering	Data Analytics on the Nano Composite Behavior of Circular CFST Columns under Axial Load	2023 International Conference on Data Science, Agents & Artificial Intelligence (ICDSAAI)	International	Conference	2024	3
147166	R Gowri, P Vasanthi, R Swathi Rekha, Vijaya Bhoopathy, S Karthikeyan,	Vijaya Bhoopathy	Civil Engineering	Machine Learning - Based Prediction of Compressive Strength Analysis	2023 International Conference on Data Science, Agents & Artificial Intelligence (ICDSAAI)	International	Conference	2024	3
147167	P Vasanthi, S Senthil Selvan, M Priyanka, Vijaya Bhoopathy, R Swathi Rekha,	Vijaya Bhoopathy	Civil Engineering	Comparative Study on Corrosion Damage Analysis Using FEM with ACO	2023 International Conference on Data Science, Agents & Artificial Intelligence (ICDSAAI)	International	Conference	2024	3
147194	Depaa Rani Balachandran, Haruna Ibrahim, Anand Verma, Vinay Kumar Singh,	Depaa Rani Balachandran	Civil Engineering	The recent progress in the advancement and efficiency of recycled steel fibre for concrete - a review	AIP Conference Proceedings	International	Conference	2024	8
147232	G Nirmala, Yeddala Prasanthi, L P Sajitha, P Ramesh Babu, N	S Laxmipriya	Civil Engineering	Latency Reduction In Industrial Iot Using Yolov8 CNN Approach For Real-Time Data Processing	2024 15th International Conference on Computing Communication and Networking Technologies	International	Conference	2024	11
150950	Suresh, Narayanan R.M	R.M Narayanan,Suresh	Civil Engineering	Evaluation Of Shoreline Changes Around Northern AndSouthern Chennai Harbor Using Historical Satellite Data And Geospatial Approaches Along Coastal	Migration Letters	International	Journal	2024	2
150952	Suresh A, R.M Narayanan	A Suresh,R.M Narayanan	Civil Engineering	Micro-Level Experimentation And Application Of Geospatial Methods For Rejuvenation Of Cooum Microwatershed	Migration Letters	International	Journal	2024	2
150953	R.M Narayanan, Laxmipriya S, Benedict Rosario C	Benedict Rosario C,R.M Narayanan,S Laxmipriya	Civil Engineering	Assessment Of Vehicle Emissions Associated With The Covid-19 Pandemic In Parts Of Greater Chennai Regime	Migration Letters	International	Journal	2024	2
150990	A Paulmakesh, A Arivalagan	A Arivalagan,A Paulmakesh	Civil Engineering,Not Available	Artificial Intelligence Methods For Building Analysis And Design In Structural Engineering	International Journal Of Progressive Research In Engineering Management And Science	National	Journal	2024	3
151004	N Rushwanth Chowdary, Soundararajan Arivalagan, M Ruben Pradeep	N Rushwanth Chowdary,Soundararajan Arivalagan	Civil Engineering	Effect of Zinc Ion in Water on Properties of Ordinary Portland cement Concrete	International Research Journal on Advanced Engineering and Management	National	Journal	2024	3
151011	Magli Vetrivelou, M Aruljothi, Vijaya Bhoopathy, Gokulakrishnan Janarthanan	Vijaya Bhoopathy	Civil Engineering	An Experimental Investigation on the Bacterial Concrete as an Innovative Approach to Self Crack Healing System	Materials Science Forum	International	Journal	2024	4

151017	M Renga Ramanujam, V Manjula	M Renga Ramanujam, V Manjula	Civil Engineering	Design Aspects and Energy Efficiency of Green Buildings	International Journal of Scientific Research & Engineering Trends	National	Journal	2024	3
151024	A Paulmakesh, Soundarajan Arivalagan	A Paulmakesh, Soundarajan Arivalagan	Civil Engineering	Evaluation of Building Structural Stability by Using Rebound Hammer Test	International Journal of Scientific Research & Engineering Trends	National	Journal	2024	3
151025	P Pratih, Mahendran Narmatha	Mahendran Narmatha, P Pratih	Civil Engineering	Sustainable Materials of Innovative Construction Techniques in Green Building	International Journal of Scientific Research & Engineering Trends	National	Journal	2024	3
152273	S Laxmipriya, M Naresh Babu, M Dinesh Babu, Yuvarajan Devarajan, J	S Laxmipriya	Civil Engineering	Decentralized Emission Inventories and Traffic Dynamics: A Comprehensive Study on PM _{2.5} and PM ₁₀ in the Road Sector of Greater Chennai	Aerosol Science and Engineering	International	Journal	2024	8
152297	Hemalatha B, M C Sashidkumar, Vivek S, Ramesh S, M Dinesh Babu,	S Laxmipriya	Civil Engineering	Experimental study of biodegradability of organic waste with industrial waste combined with effluents: A comparison by vermicomposting technology	Global Nest Journal	International	Journal	2024	1
152345	K B Ramesh, Muniyandi Manikandan	K B Ramesh, Muniyandi Manikandan	Civil Engineering	DEVELOPING THE MODEL OF CONSTRUCTION SAFETY AT SITE	International Journal Of Progressive Research In Engineering Management And Science	National	Journal	2024	0
152831	C P Shirley, A Priya, R Sarala, Rajdeep Singh Solanki, Depaa Rani	Depaa Rani Balachandran	Civil Engineering	Hybrid Technique-based Optimal Energy Management in Smart Home Appliances	IEIE Transactions on Smart Processing and Computing		Journal	2024	11
152855	S Srikanth Reddy, Ujval J Solanki, Kolla Naga Sreenivasa Rao, Ashok	Arivumangai Anbazhagan	Civil Engineering	Experimental Investigations On High Performance Fiber Reinforced Concrete Under Various Loading	Login Library Progress International	National	Journal	2024	0

154428	S Kasilingam, Arivumangai Anbazhagan	Arivumangai Anbazhagan, S Kasilingam	Civil Engineering, Not Available	A Comparative Study Of Different Strength For Different Mixer By Using Fly Ash, Quarry Dust And 10Mm Coarse Aggregate	International Journal Of Progressive Research In Engineering Management And Science	National	Journal	2024	3
154430	K S Anantha Krishnan, Adhula Hema Malini	Adhula Hema Malini, K S Anantha Krishnan	Civil Engineering	Experimental Investigation Of Concrete Beam Using Bubble Deck Technology	International Journal of Research and Analytical Reviews	National	Journal	2024	0
154431	A Allwin Jeenu Bhaskaran, Depaa Rani Balachandran	A Allwin Jeenu Bhaskaran, Depaa Rani Balachandran	Civil Engineering, Not Available	A Review Of Structural Failures And Remedial Measures	International Journal Of Progressive Research In Engineering Management And Science	National	Journal	2024	3
154433	Allwin Jeenu Bhaskaran, Depaa Rani Balachandran	Allwin Jeenu Bhaskaran, Depaa Rani Balachandran	Civil Engineering	A Review of Strengthening the Structural Elements for Stability Using Jacketing Techniques	International Journal of Scientific Research and Engineering Trends	National	Journal	2024	0
154434	S Kasilingam, Arivumangai Anbazhagan	Arivumangai Anbazhagan, S Kasilingam	Civil Engineering	Analysis and Design of G+9 Educational Building Using Etabs	International Journal of Scientific Research and Engineering Trends	National	Journal	2024	4

VARIOUS CONSULTENCY WORKS CARRIED OUT IN- MINJUR,
THIRUVERKADU, POONAMALLEE





DEPARTMENT EVENTS

TITLE OF THE EVENT

Guest Lecture on Estimation and billing techniques Engineering

DATE

29.07.24

Venue SMART

ROOM



TITLE OF THE EVENT

Interdisciplinary Lecture Role of AI in modern in Civil Engineering

DATE

20.08.24

Venue SMART

ROOM



TITLE OF THE EVENT

Professional Society Event -Presentation on standards of Building materials-
BIS

DATE

08.11.24

**Venue SMART
ROOM**



TITLE OF THE EVENT

Subject lecture on Open Channel Flow- IV yrBIS

DATE

29.06.24

Venue SMART

ROOM



TITLE OF THE EVENT

Technology talk on emerging trends in civil Engineering

DATE

14.8.24

Venue

HPC Lab



TITLE OF THE EVENT

Technology talk on emerging trends in civil Engineering

DATE

08.11.24

**Venue SMART
ROOM**



TITLE OF THE EVENT

Symposium Recent trends in Civil Engineering

DATE

11.11.24

Venue SMART

ROOM



TITLE OF THE EVENT

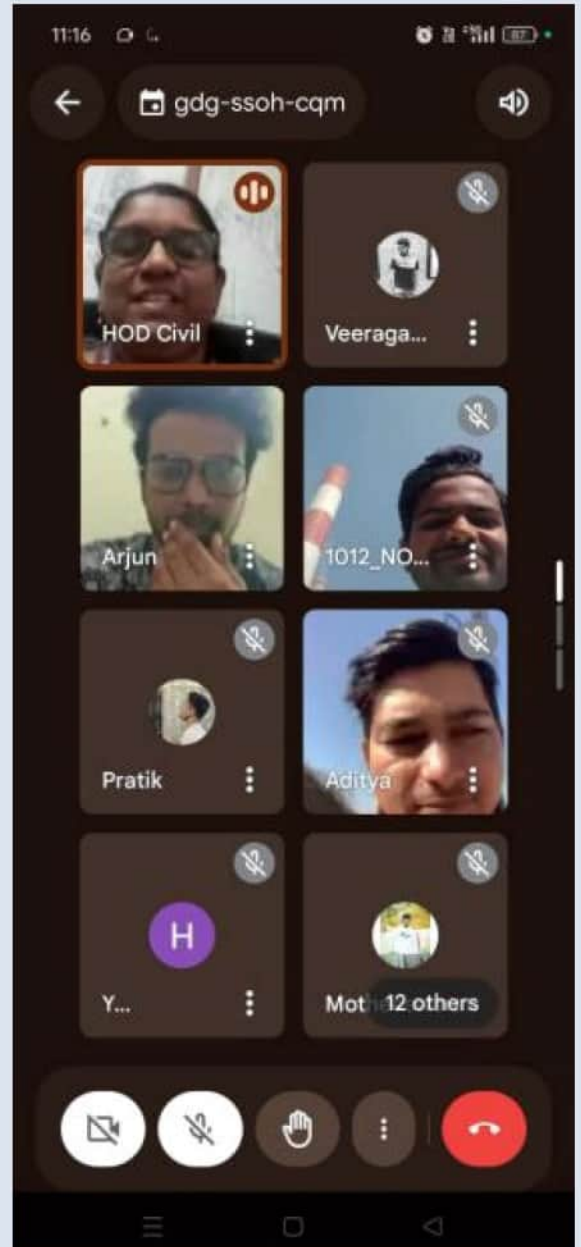
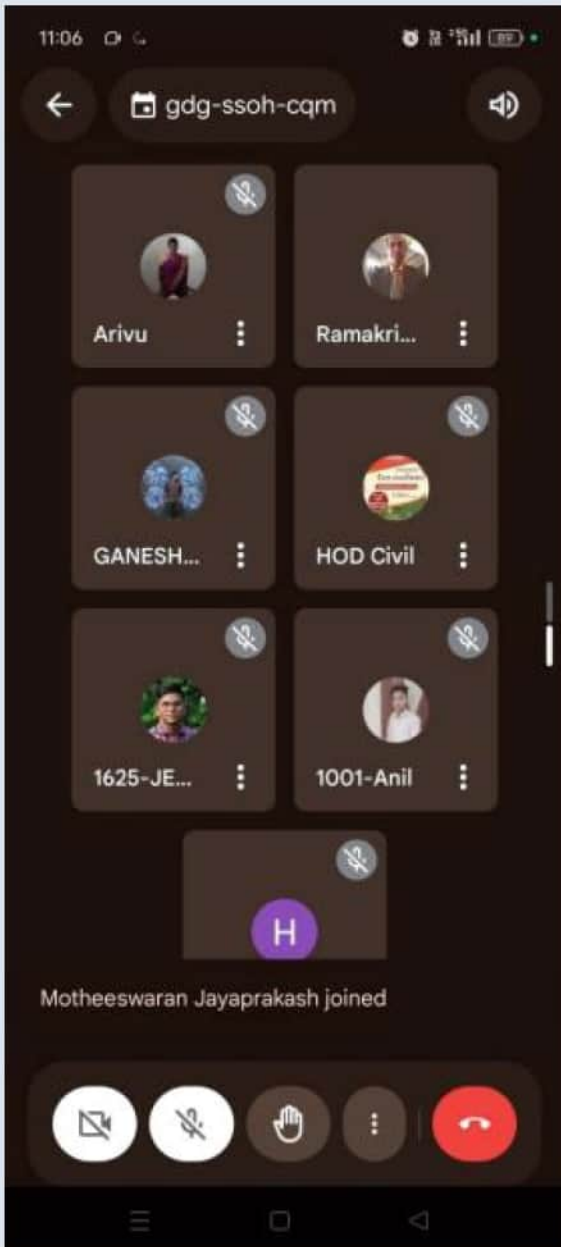
Alumni meet -Blooming Memories- 24

DATE

14.12.24

Venue Online

mode



TITLE OF THE EVENT

Subject lecture on Building Technology and Habitat Engineering- III y

DATE


29.10.24

Venue SMART


ROOM




RESEARCH MEETING - 03



Dr. M.G.R.
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UNIVERSITY ASSISTANCE CENTRE FOR RESEARCH & STUDIES
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SIR C V RAMAN RESEARCH COUNCIL
Department of Civil Engineering
VISHWESWARIAH RESEARCH FORUM

RF Meeting: 013 QUARTER NO: Q3



Dr.N.Jayachitra
Professor&Head
Dept.Of Chemical Engineering
Dr.M.G.R.Educational and
Research Institute

Topic-
Patent Drafting
10.12.2024@11.15AM
Venue: Civil Smart
Room

Agenda:

- 1) *Presentation & Discussion of Featured Article*
- 2) *MGRPUBLISH999CHALLENGE Progress Review*
- 3) *External Member Tips for Publication*
- 4) *My Best Experience in Publication*
- 5) *Open Forum Discussion to Clarify the Member Queries*
- 6) *AoB*

Mr.D.Ramakrishna
Assistant Professor
Research Forum Coordinator

Dr.T.Kavitha
Department Head

WORKSHOP ON ADVANCED IN CIVIL ENGINEERING

DATE: 28-08-2024 TO 02-09-2024



The poster features logos for NBA (National Board of Accreditation) and Dr. M.G.R. Educational and Research Institute. The main text reads: 'DEPARTMENT OF CIVIL ENGINEERING ORGANISES WORK SHOP ON ADVANCED SURVEY IN CIVIL ENGINEERING'. It mentions 'Industrial collaboration with AJ LAND SURVEY'. A list of topics includes: DGPS & Total Station Survey, Contour Survey, Topographic Survey, Drone Survey, Site & Column Marking, and Volume Calculation. The event is held at Dr.M.G.R.Educational & Research Institute from 28-08-2024 to 02-09-2024. Social media handles for DrMgr Civil Dept are provided at the bottom.

DEPARTMENT OF CIVIL ENGINEERING
ORGANISES
WORK SHOP ON
ADVANCED SURVEY
IN
CIVIL ENGINEERING

Industrial collaboration
with
AJ LAND SURVEY

- ✓ DGPS & Total Station Survey
- ✓ Contour Survey
- ✓ Topographic Survey
- ✓ Drone Survey
- ✓ Site & Column Marking
- ✓ Volume Calculation

Dr.M.G.R.Educational & Research Institute
28-08-2024 to 02-09-2024

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INDUSTRIAL VISIT TO PHASE II CAMPUS



DATE : 02.8.24

The Department of Civil Engineering organized an industrial visit for B.Tech Civil Engineering III Year students to the SLMCH Construction Site, Adayalampattu.

The visit provided practical exposure to ready-mix concrete quality testing, concreting processes, reinforcement detailing, pile foundations, soil exploration, and retaining wall construction, enabling students to gain valuable hands-on experience in real-world construction practices.

**INTERNATIONAL SEMINAR ON HIGHER EDUCATION
& SCHOLARSHIP OPPORTUNITIES IN TUM ASIA &
GERMAN INSTITUTE OF TECHNOLOGY**

DATE : 08.08.2024



The Department of Civil Engineering, in collaboration with the International Relations and Collaboration Cell, organized an International Seminar on Higher Education and Scholarship Opportunities at TUM Asia on 08.08.2024. The session, delivered by Ms. Lenny Christina, Admission Advisor for India and ASEAN Region, provided insights into international academic programmes, scholarships, admission requirements, research opportunities, internships, and specialized courses, helping students explore higher education opportunities abroad.

SEWAGE TREATMENT PLANT(STP) - NESAPAKKAM ON 02.08.2024



The Department of Civil Engineering organized an industrial visit for B.Tech Civil Engineering final-year students to the Sewage Treatment Plant (STP), Nesapakkam.

The visit provided practical insights into wastewater treatment processes, modern treatment technologies, and environmental sustainability, helping students bridge the gap between theoretical knowledge and real-world civil engineering applications.

MGRERI & ECSA-NRSC FOR SAGAR MANJUSHA CRUISE



STUDENTS CORNER

THE FUTURE OF HOUSING: 3D PRINTING HOMES

WHAT IS 3D PRINTING IN CONSTRUCTION?

3D printing, also known as additive manufacturing, is the process of creating three-dimensional objects from a digital file by layering materials in successive layers. In construction, large-scale 3D printers use specialized materials like concrete, plastics, or other composites to create entire buildings, including homes. The printer is controlled by software that dictates the shape, size, and structure of the house, allowing for the creation of complex designs with precision.

How Does 3D Printing a House Work?

User Generated Content refers to any form of content—text, images, videos, reviews, etc.—created by individuals rather than brands or organizations. It is authentic, reliable, and often resonates deeply with audiences due to its personal nature. As a UGC creator, you have the freedom to explore your interests, share your experiences, and engage with communities across various digital platforms.



BENEFITS OF 3D PRINTED HOMES:

Affordability: Reduced labor and material costs make homes more affordable, potentially cutting construction costs by up to 50%.

Speed: Homes can be built in a matter of days or weeks, significantly reducing construction time compared to traditional methods.

Customization: 3D printing allows for unique and complex designs, offering high flexibility in architecture and layout without the need for expensive molds.

Sustainability: Less material waste and the ability to use eco-friendly materials, like recycled plastics, reduce the environmental impact of construction.



THE FUTURE OF 3D-PRINTED HOMES

The potential of 3D-printed homes goes beyond affordability and efficiency. As the technology advances, we may see entire neighborhoods or cities built with 3D printers, especially in regions that face housing crises or natural disasters. In some developing countries, 3D printing could provide an affordable solution for building homes quickly, while also allowing for customization to fit the local culture and environment.

In the long term, 3D printing could also play a significant role in the construction of sustainable and self-sufficient homes. For example, homes could be designed with integrated solar panels, water collection systems, and energy-efficient insulation, reducing the overall environmental impact.

CONCLUSION

3D printing technology has the potential to revolutionize the way we build homes, offering a more affordable, sustainable, and efficient alternative to traditional construction methods. While there are still challenges to overcome, the progress made so far is promising, and as the technology continues to develop, we can expect to see more 3D-printed homes in the future. Whether it's combating housing shortages, reducing environmental impact, or creating customized living spaces,

MANISH KUMAR (2 YEAR)

PLACEMENT



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Eligibility : B. tech (civil)
Year of Passing : 2025

Position: Intern

Name of Department	Number of students
B.tech (civil)	12
Total	12

All the Best !!
DR. C. Balakrishnan
Dean- Placement & IIPC
9841199624
placement@drmgrdu.ac.in

Date : 23-04-2024
Venue :J&F India pvt ltd.
Radiance Towers, 3rd Floor Old No.
110, New No. 111,
33 Feet Road, Anna Salai, Guindy,
Chennai - 600 032



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NEWSLETTER

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