

Mar-April  
2023

## GMR Institute of Technology

Department of Civil Engineering, Newsletter

### Highlights

#### Faculty Corner

- Consultancy
- Publications
- Conference Presentations
- Online Course Completion
- Ph.D.Completion

#### Student Corner

- Achievement
- Publications
- Participations
- Technical Note
  - Intelligent Transport System
  - Geospacial Techniques

## **THE VISION OF GMRIT**

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- ❖ To be among the most preferred institutions for engineering and technological education in the country.
- ❖ An institution that will bring out the best from its students, faculty, and staff – to learn, to achieve, to compete and to grow – among the very best.
- ❖ An institution where ethics, excellence and excitement will be the work religion, while research, innovation and impact, the work culture.

## **THE MISSION OF GMRIT**

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- ❖ To turnout disciplined and competent engineers with sound work and life ethics.
- ❖ To implement outcome-based education in an IT-enabled environment.
- ❖ To encourage all-round rigor and instill a spirit of enquiry and critical thinking among students, faculty, and staff.
- ❖ To develop teaching, research, and consulting environment in collaboration with industry and other institutions.

## **DEPARTMENT VISION**

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- ❖ To be a preferred department of learning for students and teachers alike, with dual commitment to Academic and Research, and serving students in an atmosphere of innovation and critical thinking.

## **DEPARTMENT MISSION**

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- ❖ To provide adoptable education for the graduates in preparing them for a rewarding career to develop academic and research in collaboration with industry and other institutions in the field of Civil Engineering. (M1)
- ❖ To prepare the students as thinking professionals and good citizens who will be able to apply their knowledge critically and innovatively in solving contemporary professional and social problems.(M2)

## PROGRAM EDUCATIONAL OBJECTIVES (PEOS)

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PEO 1: Graduates with ability to solve core engineering problems through continuous self-paced learning in tune with changing technologies.

PEO 2: Reinforce engineering skills, critical thinking and problem-solving skills in professional engineering practices and deal with socio-economical, technical and business challenges.

PEO 3: Nurture professionalism with soft skills, managerial & leadership skills and ethical values.

## PROGRAM OUTCOMES (POS):

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Engineering graduate will be able to:

PO 1: Apply the knowledge of basic sciences and fundamental engineering concepts in solving civil engineering problems **(Engineering knowledge)**

PO 2: Identify and define civil engineering problems and investigate to analyze and interpret data to arrive at substantial conclusions. **(Problem analysis)**

PO 3: Propose appropriate solutions for engineering problems complying with functional constraints such as economic, environmental, societal, ethical, safety and sustainability in accordance with Indian standard codes of practices. **(Design/development of solutions)**

PO 4: Perform investigations, design and conduct experiments, analyze and interpret the results to provide valid conclusions. **(Conduct investigations of complex problems)**

PO 5: Select/develop and apply appropriate techniques and IT tools to analyze, design and scheduling of activities with an understanding of the limitations and successfully implement and adopt to technological changes in civil engineering with intervention of IT industries **(Modern tool usage)**

PO 6: Give reasoning and assess societal, health, legal and cultural issues with competency in professional engineering practice. **(The engineer and society)**

- PO 7: Demonstrate professional skills and contextual reasoning to assess environmental/societal issues for sustainable development. **(Environment and sustainability)**
- PO 8: Demonstrate knowledge of professional and ethical practices. **(Ethics)**
- PO 9: Function effectively as an individual, and as a member or leader in diverse teams, and in multi- disciplinary situations. **(Individual and team work)**
- PO 10: Communicate effectively with respect to oral, written and graphical communication **(Communication)**
- PO 11: Demonstrate and apply engineering & management principles in their own / team projects in multidisciplinary environment. **(Project management and finance)**
- PO 12: Recognize the need for, and have the ability to engage in independent and lifelong learning. **(Life-long learning)**

## **PROGRAM SPECIFIC OUTCOMES (PSOS):**

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Engineering graduate will be able to:

- PSO 1: Demonstrate the quality and suitability of construction materials **(Program Specific)**
- PSO 2: Ability to apply the practical aspect of analysis, design and safe construction practices **(Program Specific)**

## **OVERVIEW**

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The Department of Civil Engineering was established in 2002. It offers students a solid grounding in better utilization of resources and greater standardization of construction processes required by the construction industry. Students are taught how to use and employ innovative design methods and techniques. Exposure to contemporary facets planning, construction design and project management are key aspects of the course. Annual intake of this Department is 120 students.

## Faculty Corner

### CONSULTANCY

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Being facilitated with well-equipped equipment and laboratories the Department of Civil Engineering always contributes a major role in the consultancy works offered to the government and private organizations around the districts and so on.

As a part of Consultancy an amount of 79,850/- rupees worth core related works were carried out by the faculty with respect to various specializations.

### NATIONAL & INTERNATIONAL JOURNALS

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1. U. Siva Rama Krishna, et.al, "Finite Element Modelling of Bitumen Pavement Structures with Cement Treated Base and Sub-Base Course Layers", Journal of Construction and Building Materials Engineering, Volume-9, Issue-1, January-April, 2023.
2. S. Siva Gowri Prasad, et.al, "A Review on Stabilization of Expansive Soil using Cement, Rice Husk Ash and Waste Plastic", Journal of Geotechnical Studies, Volume-8, Issue-1, January-April, 2023.
3. S. Athibaranan, et.al, "Life Cycle Assessment for G+4 Building Using BIM and One Click LCA", Journal of Construction and Building Materials Engineering, Volume-9, Issue-1, January-April, 2023.
4. Gokulan Ravindiran, et.al, "Removal of azo dyes from synthetic wastewater using biochar derived from sewage sludge to prevent groundwater contamination", Urban Climate, 2023,101502. *(Impact Factor:6.63, SCIE and Scopus Indexed, SJR: Q1)*
5. Gokulan R, et.al, " MTBE adsorption on surface modified adsorbent kaolin-KOH – A study on kinetic equilibrium and surface morphology", 2023, Global NEST Journal, 25(4), 86-94. *(Impact Factor: 1.04, SCIE and Scopus Indexed, SJR: Q3)*
6. Gokulan R, et.al, "Enhancement of adsorption efficiency by surface modified Avocado seed for xylene removal", Global NEST Journal, 25(3), 130-138.*(Impact Factor:1.04,SCIE and Scopus Indexed, SJR:Q3)*

7. Kanta Naga Rajesh, et.al, "A review on alternatives to sand replacement and its effect on concrete properties" Materials Today: Proceedings, 2023. *(Scopus Indexed, SJR:Q2)*
8. Gokulan R, et.al, "Production of Ulva prolifera derived biochar and evaluation of adsorptive removal of Reactive Red 120: batch, isotherm, kinetic, thermodynamic and regeneration studies", Biomass Conversion and Biorefinery, April 2023. *(Impact Factor: 4.88, SCIE and Scopus Indexed, SJR: Q2)*
9. BPRVS Priyatham, et.al, "Seismic analysis and design of steel beam-column connections in Indian standard code framework", Materials Today: Proceedings, 2023. *(Scopus Indexed, SJR:Q2)*
10. Gokulan R, et.al, "Evaluation of the adsorptive removal of cationic dyes by greening biochar derived from agricultural bio-waste of rice husk", Biomass Conversion and Biorefinery, 2021. *(Impact Factor: 2.68, SCIE and Scopus Indexed, SJR: Q2)*
11. Arun Solomon A, et.al, "Turning Low-Density Polyethylene plastic waste into plastics bricks for sustainable development", Materials Today: Proceedings, 2023. *(Scopus Indexed, SJR:Q2)*
12. Arun Solomon A, et.al, "Influence of Supplementary Cementitious Materials on Stress-Strain behaviour and Toughness Characteristics of Concrete Subjected to Higher Temperature Exposure", Materials Today: Proceedings, 2023. *(Scopus Indexed, SJR:Q2)*
13. RamuP, et.al, "Drought vulnerability assessment by employing the eographical Information Systemand Analytical Hierarchy Process for the Kurnool district of Andhra Pradesh, India",2023, Ecocycles, Vol.9(1). *(Scopus Indexed, SJR:Q4)*
14. Srikanth, K, et.al, "A study on properties of pervious concrete with high-volume usage of supplementary cementitious materials as substitutes for cement". Asian Journal of Civil Engineering ,2023. *(Impact Factor: 0.397, Scopus Indexed, SJR: Q3)*

## CONFERENCE PRESENTATION

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- ❖ Arun Solomon A, et and D. Joseph Charles Tamilmaran, Abusive Comment Detection in Social Media with Bidirectional LSTM Model, 2023 5th International Conference on Smart Systems and Inventive Technology (ICSSIT), Tirunelveli, India, IEEE Xplore, 2023, pp. 1368-

1373. (Scopus Indexed)

## ONLINE COURSE COMPLETION

- ❖ Dr.A.Arun Solomon completed 7 weeks online course on “3D CAD Fundamental” in Coursera platform.

## PH.D COMPLETION



Three of the faculty members Dr.Pandimani, Dr. Kanta Naga Rajesh and Dr. Siva Rama Krishna Uppuluri have completed their doctoral program.

## Student Corner

## ACHIEVEMENTS



Ms.Sandhya (21341A0105) won gold medal in Andhra pradesh 10<sup>th</sup> State Power Lifting Compititon



**A. Jahnavi  
(19341A0136) got  
selected in National  
Power Lifting  
Competitions which are  
held from 10<sup>th</sup> to 13<sup>th</sup> of  
April 2023 at Himachal  
Pradesh.**

## INTERNATIONAL JOURNAL PUBLICATIONS

- ❖ K. Chalapathi, K. V. Harsha Vardhan, K. Ramesh Kumar, B. Satish Kumar, D. Lakshminadh, "Life Cycle Assessment of (G+1) Office Building Using BIM and OneClick LC", International Journal of Research Publication and Reviews, ol 4, no 3, pp 560-567, March 2023.
- ❖ J. Teena, G. Gowthami, B. Lakshman, K. Naga Lokesh, K. Gopi, "Open-Graded Friction Course: A Comprehensive Review of Design, Construction, and Performance", International Journal of Research Publication and Reviews, ol 4, no 3, pp 1787-1790, March 2023.
- ❖ P. Swetha, Himansu Senapati, R. Gopikrishna, K. Raviteja, B. Sai Sumanth, B. Jitendra, "Sustainable Material Choice for Residential Building Construction: A Life Cycle Assessment Based on BIM", International Journal of Research Publication and Reviews, ol 4, no 3, pp 919-928, March 2023.
- ❖ B. Kodanda Ramdas, G. Sai Venkata Babu, Ch. Saraswathi, D. Abishek, B. Babu Rao, "mpact Analysis of Residential Building Materials on Environment using BIM and LCA", International Journal of Research Publication and Reviews, ol 4, no 3, pp 953-965, March 2023.
- ❖ N. Sai Charanya, P. Venkatarao, S. Abdul Junaid, D. Chinnammalu, N. Maheswari, "Utilization of BIM And Life Cycle Metric Tools for



Evaluating the Life Cycle of a Residential Building”, International Journal of Research Publication and Reviews, ol 4, no 3, pp 1073-1077, March 2023.

- ❖ V. Srinivasurao, R. Bhanu Sai, P. Prasanna Kumar, P. Divya, R. Karthik, “Sesmic Analysis and Design of a Shopping Complex Using BIM: Replacement of Different Column Sections”, International Journal of Research Publication and Reviews, Vol 4, no 3, pp 1082-1094, March 2023.
- ❖ T. Sasidhar, Pyla Teja, L. Manikanta, Vandana Sai, P. Mahesh, “Building Better Roads with BioChar: A Review on Modified Bituminous Concrete for Sustainable Infrastructure”, International Journal of Research Publication and Reviews, ol 4, no 3, pp 1201-1204, March 2023.
- ❖ T. Mahesh Kumar, P. Harshitha, V. Lahari, Sk. Ijaj, N. Souhit Vikas, “Utilisation of Green Building Materials in Building Construction for a Sustainable Environment -BIM and LCA Analysis”, International Journal of Research Publication and Reviews, Vol 4, no 3, pp 1243-1250, March 2023.
- ❖ G Sivani, D. Naveen, B. Revanth Reddy, Ch. Deepak, G. Ajay, “Design and Life Cycle Assessment of Apartment Building Using BIM”, International Journal of Research Publication and Reviews, Vol 4, no 3, pp 1335-1342, March 2023.
- ❖ K. Manoj Kumar, V. M. L Tejaswi, 3K. Nitish Kumar, N. Teja Prasad, S. Rajeswari, 6P. Seshadri, “A Systematic Review of Biochar's Use as a Filler Material in Stone Mastic Asphalt”, international Journal of Research Publication and Reviews, Vol 4, no 3, pp 1797-1800, March 2023.
- ❖ Y Vinay Kumar, M Sai Lakshmi, S Chaitanya Varma, N Sai Sarath, M Sushma, “Architectural Modelling - its Representation through Virtual Reality and Energy Analysis of a Residential Building Using Various BIM Software”, International Journal of Research Publication and Reviews, Vol 4, no 3, pp 1473-1477, March 2023.
- ❖ Jahnavi Adduri, Ch Chandini, A Santosh Kumar, K Vardhan, K Sandeep, “Sustainable Material Choice for Apartment Building Construction: A Life Cycle Assessment Based on BIM and Life Cycle Metrics Tool”, International Journal of Research Publication and Reviews, Vol 4, no 3, pp 2145-2152, March 2023.

- ❖ K. Dilleswara Rao, K. Lokesh, M. Arif, S. Naveen, S. Kranthi Kuma, “Utilization of Crumb Rubber in Concrete Pavement, International Journal of Research Publication and Reviews, Vol 4, no 3, pp 2677-2681, March 2023.
- ❖ J. Ramesh, G. Bhargavi, P. Avinash, P. Raviteja, Surya kumara, “investigation of Carbon Footprint on Pre-Engineered Building Using Building Information Modeling and One Click LCA”, International Journal of Research Publication and Reviews, Vol 4, no 3, pp 1205-1216, March 2023.
- ❖ Inti Jagan, Pongunuru Naga Sowjanya, Kanta Naga Rajesh, “A review on alternatives to sand replacement and its effect on concrete properties” Materials Today: Proceedings, 2023,(Scopus)(ISSN 2214-7853)(<https://doi.org/10.1016/j.matpr.2023.03.332>).

## **PARTICIPATIONS**

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- ❖ 43 Number of students attended a technical event “College Tales” on 19-4-2023, conducted by GMR Institute of Technology in association with Indian Society for Technical Education (ISTE).

## **PLACEMENTS**

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- ❖ 21 students were recruited in the GMR group.
- ❖ 16 students were employed in the Sarvani Industries with a CTC of 2.4 LPA each.
- ❖ 1 Student is employed in the JSW with a CTC of 6.5 LPA.

**Compiled By:**  
**Dr.A.Arun Solomon,**  
**Sr.Assistant Professor,**  
**Department of Civil Engineering,**  
**GMRIT, Rajam**

**Student Coordinators:**  
**Mr.D Hemavardhan (20341A0123)**  
**Mr. P Bilgates (21341A0118)**  
**III Year, Department of Civil Engineering,**  
**GMRIT, Rajam**