

# MEXPRESS

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REACH US AT



Mechanical Engineering Association  
Department of Mechanical Engineering  
KUMARAGURU COLLEGE OF TECHNOLOGY



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## From the Editors...

Dear Readers,

Good day! It is with great pleasure that we bring you the latest edition of our newsletter, shedding light on the academic endeavors and achievements within our esteemed department.

In this edition, we focus on the invaluable contribution of our faculty members who serve not only as educators but also as valuable resources. Their expertise spans various domains, enriching the learning experience for our students. We highlight their roles as resource persons, sharing knowledge and insights that extend beyond the confines of the classroom.

A significant aspect of academic excellence is the scholarly work produced by our faculty members. We take pride in showcasing the recent paper publications authored by our dedicated educators. These publications not only contribute to the academic community but also reflect the commitment of our faculty to advancing knowledge in their respective fields.

Furthermore, the rigorous process of manuscript review plays a crucial role in maintaining the high standards of our academic publications. Our faculty members diligently contribute their time and expertise to ensuring the quality and credibility of the research disseminated.

This edition also provides a glimpse into the diverse programs our faculty has actively participated in. From workshops and conferences to seminars and training sessions, our educators are at the forefront of academic engagement, fostering an environment of continuous learning.

In the "Snap Shots" section, we capture moments of collaboration, engagement, and shared learning experiences within our academic community. These snapshots offer a visual narrative of the vibrant academic culture that thrives within our institution.

Last but not least, we turn our focus to the students who are at the heart of our academic community. Their active participation reflects their eagerness to learn and contribute to the scholarly atmosphere we strive to cultivate.

We hope you enjoy this edition of our newsletter and gain a deeper appreciation for the academic tapestry that continues to unfold within our institution.

Happy reading!

**Editors....**



## FACULTY AS RESOURCE PERSONS:



**Dr. V. R. Muruganatham**, Associate Professor acted as external examiner for the end semester practical examination at Government College of Technology, Coimbatore on 05-01-2024.

**Mr. K. Manikanda Prasath**, Assistant Professor – II, acted as external examiner for the end semester practical examination at SNS College of Engineering on 08-01-2024 and he also acted as external examiner for end semester paper valuation on 10-01-2024.



**Dr. S. Rajesh**, Assistant Professor – II, acted as external examiner for the end semester practical examination at Hindusthan Institute of Technology, Coimbatore.

**Dr. K. Krishnamoorthi**, Assistant Professor – III, acted as external examiner for the end semester practical examination at SNS College of Engineering on 11-01-2024.



**Dr. P.R. Ayyappan**, Assistant Professor (SRG), acted as external examiner for the end semester practical examination at Government College of Technology, Coimbatore on 05-01-2024 and on 06-01-2024.

**Dr. K. K. Arun**, Assistant Professor – III, acted as external examiner for the end semester practical examination at Government College of Technology, Coimbatore on 04-01-2024 and on 11-01-2024 and 12-01-2024.



**Dr. A. P. Arun**, Assistant Professor – III, acted as external examiner for the end semester practical examination at SNS College of Engineering on 11-01-2024.





**Dr. K. M. Senthilkumar**, Associate Professor, acted as external examiner for the end semester practical examination at Government College of Technology, Coimbatore on 08-01-2024 and on 10-01-2024.

**Dr. P. S. Samuel Ratna Kumar**, Assistant Professor – III, acted as external examiner for the end semester practical examination at external Member during the First Doctoral Committee meeting for the Ph. D. Scholar, Mr. Premnath K (Reg No. 24132691149) at Sri Krishna College of Engineering and Technology on 03-01-2024. Further, Dr. Samuel Ratna Kumar attended a Review Meeting of PDR Committee - Developmental of hemispherical rubber bladder at ANSP, Hyderabad on 31-01-2024.



### PAPER PUBLICATIONS:



**Dr. S. Thirumurugaveerakumar**, Associate Professor, published his paper titled "Internal combustion engine fuel synthesis, suitability, physical property evaluation using mixing models and backpropagation ANN algorithm" in Elsevier, a scopus indexed journal. <https://doi.org/10.1016/j.engappai.2024.107970>

### MANUSCRIPTS REVIEWED:

**Dr. M. Balaji**, Associate Professor, reviewed a manuscript titled "Enhancing Supplier Selection for Sustainable Raw Materials: A Comprehensive Analysis Using Analytical Network Process (ANP) and Topsis Methods", for the Mechanical and Industrial Engineering, an International Journal.



**Dr. B. N. Sreeharan**, Assistant Professor – III, reviewed a manuscript titled "The Influence of Hot Extrusion on The Mechanical and Wear Properties of an Al6063 Metal Matrix Composite Reinforced with Silicon Carbide Particulates for Qeios.

## PROGRAMMES PARTICIPATED



Following faculty members participated in National level FDP on Precision Manufacturing from 08-01-2024 to 13-01-2024 at PSG College of Technology, Coimbatore.

- Dr. T. Karuppusamy**, Assistant Professor - III
- Dr. V. Manivel Muralidaran**, Assistant Professor - III
- Dr. P. S. Samuel Ratna Kumar**, Assistant Professor - III
- Dr. M. Thirumalai Muthukumaran**, Assistant Professor - III
- Dr. M. A. Vinayaga Moorthi**, Assistant Professor - III
- Mr. S. Prabhu**, Assistant Professor - II
- Dr. V. R. Muruganatham**, Associate Professor
- Mr. V. R. Navaneeth**, Assistant Professor - II



## Department Activities



**Dr. B. N. Sreeharan**, Assistant Professor – III completed an online course on “Essentials of data Visualization using MS excel” on 16-01-2024 conducted by Acacia University for Professional Development.



**Dr. R. Manivel**, Professor, participated in Second edition of R & D Innovation Fair on 19-01-2024 at Indian Institute of Technology, Hyderabad.



**Dr. M. Thirumalai Muthukumaran**, Assistant Professor – III, completed an online course on "Introduction to High-Throughput Materials Development" on 24-01-2024 conducted by Georgia Institute of Technology and offered through Coursera.

**Dr. N. Sangeetha**, Senior Associate Professor, participated in a Vishwakarma Award Finale from 04-01-2024 to 06-01-2024 at Indian Institute of Technology, Delhi.





## SNAPSHOTS



Dr. Manivel @ IInvenTiv 2024



Dr. Manivel @ IInvenTiv 2024

# Department Activities



**Dr. Sangeetha @ IIT, Delhi**

## STUDENT PARTICIPATIONS:

**Mr. R. Dinesh babu** (21BME204), acted as one of the volunteers in Jananam'24 from 04-01-2024 to 06-01-2024.



**Mr. K. Krisnan** (21BME211), participated in a Competition from 04-01-2024 to 06-01-2024 at Indian Institute of Technology, Delhi.





### Department of Mechanical Engineering

#### INSTITUTE VISION:

The vision of the college is to become a technical university of International Standards through continuous improvement.

#### INSTITUTE MISSION:

Kumaraguru College of Technology (KCT) is committed to providing quality Education and Training in Engineering and Technology to prepare students for life and work equipping them to contribute to the technological, economic, and social development of India. The College pursues excellence in providing training to develop a sense of professional responsibility, social and cultural awareness and set students on the path to leadership.

#### DEPARTMENT VISION:

To emerge as a centre, that imparts quality higher education through the programme in the field of Mechanical Engineering and to meet the changing needs of the society.

#### DEPARTMENT MISSION:

The department involves in sustained curricular and co-curricular activities with competent faculty through teaching and research that generates technically capable Mechanical Engineering professionals to serve the society with delight and gratification.

### B. E. MECHANICAL ENGINEERING

#### PROGRAM EDUCATIONAL OUTCOMES (PEO's):

- PEO 1 :** Graduates will take up career in manufacturing and design related disciplines.
- PEO 2 :** Graduates will be involved in the execution of Mechanical Engineering projects.
- PEO 3 :** Graduates will take up educational programme in mastering Mechanical sciences and management studies.

#### PROGRAM OUTCOMES (PO's):

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



2. **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.
3. **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.
4. **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.
5. **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.
6. **The engineer and society:** Apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. **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.
8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. **Individual and teamwork:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11. **Project management and finance:** Demonstrate knowledge and understanding of 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.
12. **Life-long learning:** Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

## PROGRAM SPECIFIC OUTCOMES (PSO's):

1. Apply the fundamentals of science and mathematics to solve complex problems in the field of design and thermal sciences.
2. Apply the concepts of production planning and industrial engineering techniques in the field of manufacturing engineering.

## M. E. INDUSTRIAL ENGINEERING

## PROGRAM EDUCATIONAL OBJECTIVES (PEO's):

- PEO 1 :** Graduates will be mid to higher level management / engineering professionals with responsibilities in engineering management, data analysis and business operations.
- PEO 2 :** Graduates will be engineering professionals, and technology leaders who would manage such functions as plant engineering, production, supply chain and quality management.
- PEO3 :** Graduates would function as educators or researchers in academic institutions.

## PROGRAM OUTCOMES (PO's):

- P01 :** An ability to independently carry out research /investigation and development work to solve practical problems.
- P02 :** An ability to write and present a substantial technical report/document.
- P03 :** Students should be able to demonstrate a degree of mastery over the area as per the specialization of the program. The mastery should be at a level higher than the requirements in the appropriate bachelor program.
- P04 :** Apply knowledge and competencies in manufacturing, analytics, supply chain, quality and engineering management.
- P05 :** Apply principles of industrial engineering to solve problems in industry.
- P06 :** An ability to work as part of interdisciplinary teams, communicate effectively, model and design engineering systems optimally.