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Mechanical Engineering Department's Official Newsletter



KUMARAGURU COLLEGE OF TECHNOLOGY

Department of Mechanical Engineering

Mechanical Engineering Association

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EDITORS PORTFOLIO

From the Editors...

Dear Readers,

It gives us immense pleasure to present this edition of our Department Newsletter, which highlights the academic, professional, and developmental activities carried out by our faculty members.

This issue reflects the continuous efforts of the department in fostering excellence through various initiatives. Our faculty members have actively contributed as **Resource Persons**, sharing their expertise and knowledge across various platforms.

We are proud to present the scholarly achievements of our team through **Paper Publications** and **Book Publications**, which demonstrate our commitment to research and academic growth. The participation of faculty in faculty development programmes, highlighted under **Programmes Participated**, indicates their dedication to staying updated with the latest developments in their respective domains.

Furthermore, the **Faculty Upskilling** initiatives underline the department's focus on continuous learning and professional enhancement, ensuring that our educators remain competent and industry relevant.

The department has also made notable strides in fostering innovation and research through **Patents**, reflecting the faculty's commitment to developing novel ideas, technologies, and solutions with societal and industrial relevance.

In addition, our faculty members have actively contributed to the academic community through **Manuscripts Reviewed**, serving as peer reviewers for reputed journals and conferences, thereby upholding the quality and integrity of scholarly publications.

The department's dedication to knowledge dissemination and professional development is further demonstrated through various **Programmes Organized**, including workshops, seminars, guest lectures, faculty development programmes, and training initiatives that have provided

valuable learning opportunities for students, researchers, and professionals alike.

We sincerely appreciate the efforts of all faculty members who have contributed to this newsletter. We hope this newsletter provides valuable insights into our activities and achievements. We look forward to your continued support and encouragement.

Warm regards,
Editors





DEPARTMENTAL ACTIVITIES

Faculty as Resource Persons





Dr. M. Balaji, Associate Professor, served as a Doctoral Committee Member for his research scholar Mr. M. Chandru at KCT on 24th April 2026.



Dr. Balaji. also delivered a lecture as a Resource Person on “Quantitative Techniques for Management” at Sree Saraswathi Thyagaraja College, Pollachi on 11th April 2026.



Dr. S. Bhaskar, Associate Dean, participated as a Resource Person in a Doctoral Advisory Committee (DAC) meeting at Sri Ranganathar Institute of Engineering and Technology on 13th May 2026.

These contributions reflect the department's active engagement in academic mentoring, knowledge dissemination, and institutional development.

Paper Publication



Dr. K. K. Arun, Assistant Professor – III, published a research article titled "Design and Development of a Bio-Inspired Worm Robot for Pipe Inspection" in the International Journal of Innovative Research in Technology on 7th May 2026.

Book Publications

Faculty members of the department have contributed to scholarly publishing through notable book publications in **May 2026**:



Dr. M. A. Vinayaga Moorthi, and **Dr. B. N. Sreeharan,** Assistant Professors – III, authored the book *"Applied Manufacturing Technology"*, published by DNA Publications (ISBN: 978-93-7287-558-4).



- **Dr. V. Muthukumaran**, Professor, **Dr. K. M. Senthilkumar**, Associate Professor, and **Dr. S. Balaji,** Assistant Professor – III, jointly authored *"Introduction to Mechanical Behavior of Materials"*, published by RG International Publication (ISBN: 978-81-6928-7081).







Programmes Participated



Mr. P. D. Devan, Assistant Professor II, participated in a **Five-day National FDP** on *"Climate Change Mitigation: Impact of Energy Research and Innovation"* organized by **Ramco Institute of Technology, Rajapalayam**, from **11th to 15th May 2026**. He also attended an International FDP on "Charging Infrastructure Management in Electric Vehicles" organized by SKYYSkill Labs from 15th to 16th May 2026, enhancing his knowledge in EV infrastructure.

Mr. R. S. Mohankumar, Assistant Professor II, participated in two international webinars "Claude 101" on 6th May 2026 and "AI Capabilities and Limitations" on 23rd May 2026, conducted by Anthropic Education, gaining insights into emerging AI.





Dr. M. Thirumalai Muthukumaran, Assistant Professor III, participated in a National-level Faculty Development Programme on "Problem Formulation Techniques in Research & Identifying Predatory/Refereed Journals" organized by ProMind Learning Academy, Erode, from 27th to 31st May 2026.

Faculty Upskilling

Dr. V. R. Muruganantham, Associate Professor, **Dr. M. Thirumalai Muthukumaran**, **Dr. M. A. Vinayaga Moorthi**, and **Dr. V. Manivel Muralidaran,** Assistant Professors – III, successfully completed the NPTEL course and FDP on "Assessment of Student Performance" conducted from 23rd February to 10th April 2026 in online mode.





Mr. S. Sivakumar, Assistant Professor II, completed the NPTEL course and FDP on "Engine System and Performance" from 26th January to 30th April 2026, strengthening his expertise in automotive systems.

Patents



Dr. M. A. Vinayaga Moorthi, Assistant Professor III, published a patent titled "Safety Guard Apparatus for Heavy Motor Vehicles" under Application No. 202641067245 on 29th May 2026.



Dr. V. R. Muruganantham, Associate Professor, published a patent titled "Smart Electric Vehicle Powertrain System with Adaptive Energy Management" under Application No. IN202631060489 A1 on 12th May 2026.



Dr. K. K. Arun, Assistant Professor III, was granted a Design Registration for his innovation titled "Drainage System" under Application No. 426555-001 on 2nd June 2026.

Manuscripts Reviewed



Dr. K. K. Arun, Assistant Professor – III, reviewed the manuscript titled "Experimental Investigation of Pressure Drop in Pipe Flow with Standard Fittings at Varying Reynolds Numbers" for the journal Research and Applications of Thermal Engineering.



Dr. B. N. Sreeharan, Assistant Professor – III, reviewed the manuscript titled "Data-Driven Prediction and Multi-Objective Process Optimization of Cross-Sectional Morphology in Narrow-Gap GMAW" for the Journal of the Brazilian Society of Mechanical Sciences and Engineering.

Programmes Organized

The Department organized a five-day Faculty Development Programme (FDP) on “Foundations of AI and Physical AI for Core Engineering Disciplines” from 11th to 15th May 2026 at KCT. Coordinated by **Mr. R. S. Mohankumar,** Assistant Professor – II, the programme witnessed the participation of 15 faculty members and aimed to enhance understanding of Artificial Intelligence and its applications in core engineering domains.



The sessions were delivered by distinguished experts from **TANCAM**, including **Mr. Raja Subramanian, Vice President**, **Dr. G. Kartheek, Research Engineer**, and **Mr. G. Vergin Vino, Design Engineer**. The FDP provided participants with valuable insights into emerging AI technologies, Physical AI concepts, and their integration into engineering education and practice, strengthening faculty competencies in advanced technological domains.

The Department organized a **three-day HyperMesh Training Program** from **11th to 13th May 2026** at KCT. The programme was coordinated by **Dr. M. A. Vinayaga Moorthi** and **Mr. R. S. Mohankumar**, with the participation of **21 students**.





The training was conducted by **Mr. Marudhu Pandian** and **Mr. Vergin Vino** from **TANCAM**, who provided hands-on exposure to HyperMesh software and its applications in engineering analysis and simulation. The programme enhanced participants' practical knowledge of pre-processing techniques, finite element modeling, and industry-relevant CAE tools, thereby strengthening their readiness for advanced engineering applications.

Vision, Mission, POs, PSOs and PEOs

KUMARAGURU college of technology
COIMBATORE – 641 049

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 of Mechanical Engineering

Department Vision*:

To achieve global recognition for the programs of the department by promoting innovation, sustainability, and leadership, contributing to the society.

Department Mission*:

1. To promote innovation in the Mechanical Engineering through curriculum, focusing on sustainability and ethical practices.

2. To create an active learning ecosystem for acquiring knowledge and skills in Mechanical Engineering.

3. To facilitate research in mechanical systems and sustainable technologies that have an impact on industry and society.

** Focused SDGs are: 4, 8, 9, 12, 13, 17*

B. E. MECHANICAL ENGINEERING

Program Educational Outcomes (PEO's):

PEO 1: Graduates to pursue careers in Mechanical engineering and allied fields.

PEO 2: Graduates to engage in the execution of multi-disciplinary engineering activities.

PEO 3: Graduates to pursue professional development programs in Mechanical Engineering Science and Management.

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 specified needs with appropriate consideration for public health and safety, and 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. Engineering Tool Usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.

6. The Engineer and The World: Apply contextual knowledge to assess societal, health, safety, legal, cultural, and environmental issues, and demonstrate the knowledge of and need for sustainable development.

7. Ethics: Apply ethical principles and commit to professional ethics, responsibilities, and norms of engineering practice, including inclusive and diverse behavior.

8. Individual and Collaborative Teamwork: Function effectively as an individual, and as a member or leader in diverse teams and in multidisciplinary settings.

9. Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, including writing reports, design documentation, making presentations, and giving/receiving clear instructions.

10. Project Management and Finance: Demonstrate knowledge and understanding of engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects in multidisciplinary environments.

11. 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, including adaptability and tech awareness.

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 AUTOMATION AND ROBOTICS

PROGRAM EDUCATIONAL OBJECTIVES(PEOs):

PEO1: Graduates will be on roles in implementing cutting edge automation technologies by integrating intelligent systems and driving advancements in industrial processes.

PEO2: Graduates will excel as professionals by applying concepts of industrial robotics and advanced engineering principles to develop innovative and sustainable solutions.

PEO3: Graduates will engage in lifelong learning as educators and researchers in the field of industrial automation.

PROGRAM OUTCOMES (POs)

PO1: An ability to independently carry out research/investigation and development work to solve practical problems.

PO2: An ability to write and present a substantial technical report/document.

Students should be able to demonstrate a degree of mastery over the area as

PO3: per the specialization of the program. The mastery should be at a level higher than the requirements in the appropriate bachelor program.

PO4: Apply advanced engineering techniques, modern automation tools, and emerging technologies to solve complex industrial problems efficiently.

PO5: To collaborate effectively in interdisciplinary teams, demonstrating leadership and ethical responsibility in automation and robotics projects.

PO6: An ability to continuously engage in lifelong learning and professional development to adapt to technological advancements in industrial automation and robotics.