

MExpress

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Mechanical Engineering Department's Official Newsletter

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KUMARAGURU
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Mechanical Engineering Association

Department of Mechanical Engineering

KUMARAGURU COLLEGE OF TECHNOLOGY



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From the Editors...

Dear Readers,

With immense pride and pleasure, we present this month's departmental newsletter—a reflection of the dynamic academic, research, and professional pursuits that continue to shape our journey forward.

This edition captures the essence of our collective achievements. The department successfully organized various programmes fostering knowledge exchange, while our faculty made valuable contributions as resource persons and through paper presentations, publications, and manuscript reviews. Their scholarly engagement is further evidenced by book chapter contributions and consultancy initiatives that strengthen our academic influence.

The granting of patents and active participation in national and international programmes reflect our commitment to innovation and continual growth. Faculty upskilling efforts and MoU renewals reinforce our vision of staying relevant and connected in an ever-evolving academic landscape.

Our close ties with industry continue to grow, opening doors for collaborative progress. The enthusiasm and accomplishments of our students across various activities bring vibrancy and pride to our department.

This issue also includes glimpses of memorable events and milestones through our snapshots section—moments that define who we are and where we aspire to go.

We extend my sincere gratitude to every contributor and supporter of this publication. Your commitment and collaboration have made this issue possible, and we look forward to our continued success together.

Warm regards,

Editors....

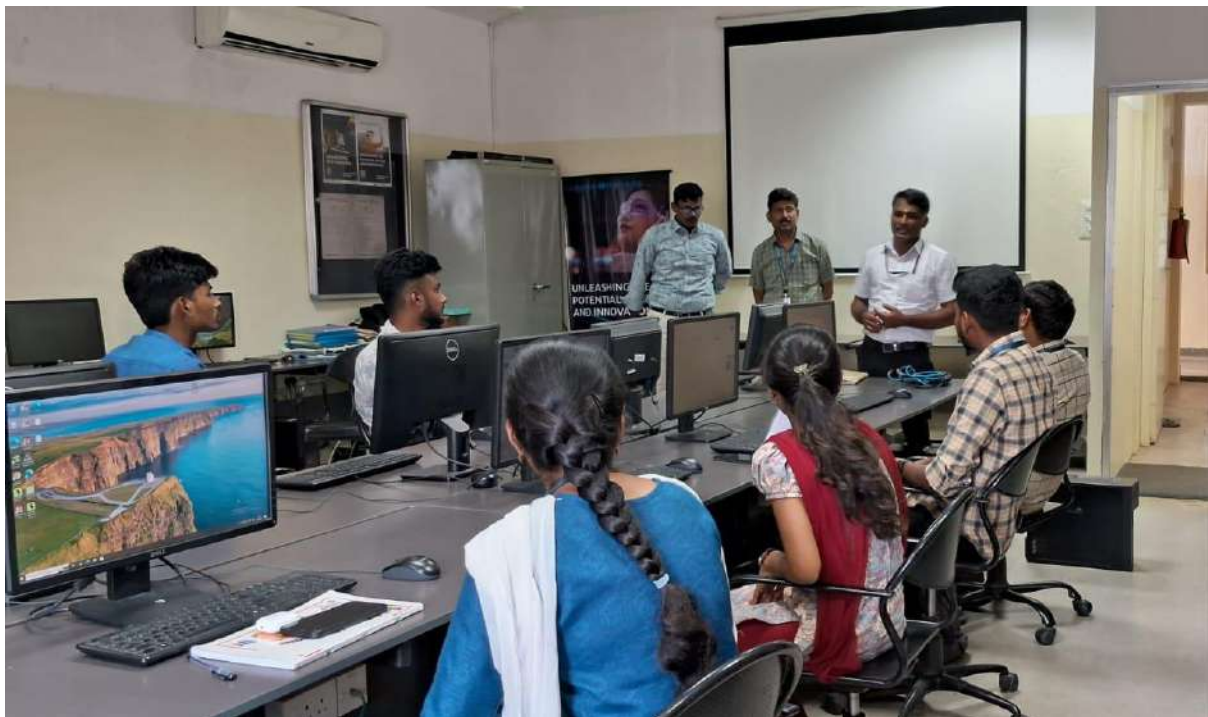


Departmental Activities

PROGRAMMES ORGANIZED



An online Industry-led Session was organized by the department on 26-03-2025. **Ms. Vipraja Pulluru**, Delivery Manager, Stellantis PLM Bundle, Capgemini Engineering was the resource person. **Mr. R. S. Mohankumar**, Assistant Professor – II, coordinated the session.



Departmental Activities

CAD Training was arranged by the department from 19-02-2025 to 28-02-2025 to the students who got placed in CAPGEMINI Engineering. **Mr. J. Abdullah**, Chief Technical Officer, Coimbatore Cad Solutions Pvt. Ltd., was the resource person. **Dr. M. A. Vinayaga Moorthi**, Assistant Professor – III, coordinated the training.



A Career Planning Session for Mechanical Engineering Students titled “Leap to destiny” was organized in the department on 23-04-2025. **Mr. V. Sathyamoorthy**, Co-founder, The Master Academy (GATE), Coimbatore was the resource person. **Dr. V. Muthukumar**, Professor, **Dr. K. M. Senthilkumar**, Associate Professor, and **Dr. S. Balaji**, Assistant Professor – III coordinate the session.



Departmental Activities



As a part of virtual open day – a virtual event, department organized a webinar on 28-04-2024 for the general public. **Mr. R. S. Mohankumar**, Assistant Professor – II, addressed the gathering. **Dr. M. A. Vinayagamoorthi**, Assistant Professor – III, **Dr. B. N. Sreeharan**, Assistant Professor – III and **Mr. K. Manikandaprasath**, Assistant Professor – II coordinated the event.

FACULTY AS RESOURCE PERSON



Mr. B. Jeeva, Assistant Professor – II, acted as a resource person and delivered an online talk on “Protecting Intellectual Property Rights and IP Management for start-ups & Technology Readiness level” for R. C Patel Institute of Technology, Shirpur, Maharashtra students on 20-03-2025.

Departmental Activities



Dr. K. K. Arun, Assistant Professor – III, acted as Jury Member for the TNWISE 2025 Hackathon at Er. Perumal Manimekalai College of Engineering, Hosur on 04-04-2025 and at Rajalakshmi Engineering College on 11-04-2025.

Dr. N. Sangeetha, Senior Associate Professor, acted as Jury Member for the TNWISE 2025 Hackathon for Women in Science and Engineering at PMC Tech, Hosur on 04-04-2025.



Mr. P. D. Devan, Assistant Professor – II, acted as a Jury Member for the TNWISE'25 Women's Hackathon held at Rajalakshmi Engineering College on 11-04-2025.

Dr. M. Ramesh Kumar, Assistant Professor – III, acted as a Jury Member for the TNWISE 2025 Hackathon held at Er. Perumal Manimekalai College of Engineering, Hosur on 04-04-2025.



Dr. S. Sivakumar, Assistant Professor – III acted a Jury Member for the TNWISE'25 Women's Hackathon held at Rajalakshmi Engineering College on 11-04-2025.

Dr. K. K. Arun, Assistant Professor – III and **Mr. P. Pradeep**, Assistant Professor – II delivered a Guest lecture on “Idea to Start up” at KGISl Institute of Technology on 29-04-2025



PAPER PRESENTATIONS



Mr. S. Sivakumar, Assistant Professor – II, presented his paper titled “Design and Simulation of modified receiver tube in parabolic trough collector” in the International Conference on Contemporary Enigneering and Technology 2025 organized by Science and Innovative Engineering and Technology, Chennai during 22-03-2025 and 23-03-2025.

Departmental Activities

Dr. M. A. Vinayaga Moorthi, Assistant Professor – III, presented a paper titled “Experimental study on mechanical behaviour of reinforced composite for automotive interior panel applications” in the Third IEEE International Conference on Advancements in Electrical, Electronics, Communication, Computing and Automation held at KCT during 04-04-2025 and 05-04-2025.



Dr. T. Karuppusamy, Assistant Professor – III, presented a paper titled “Optimised experimental evaluation of surface roughness of age hardened & ground AL6061/SCI/ graphite composite alloys using taguchi orthogonal array” in the Third IEEE International Conference on Advancements in Electrical, Electronics, Communication, Computing and Automation held at KCT during 04-04-2025 and 05-04-2025.

Dr. S. Rajesh, Assistant Professor – III, presented a paper titled “Advancements in Aluminium matrix composites applications and future trends in the automotive industry” in the Third International Conference on Research Advancements and Innovations in Sustainable Engineering held at Dr. NGP Institute of Technology during 06-03-2025 and 07-03-2025.



Mr. P. Pradeep, Assistant Professor – III, presented a paper titled “Multilingual explainable NLP and deep learning based framework for intelligent plagiarism detection and academic contest validation” in the International Conference on research and development in information, communication and commuting technology held at EGS Pillay Nagapattinam, Tamilnadu on 04-04-2025.

PAPER PUBLICATIONS

Mr. S. Prabhu, Assistant Professor – II, published a paper entitled "Analyzing Teacher Stress and Self Efficacy in Classroom Management with Fast Iterative Shrinkage Thresholding ELM Models" in the IEEE Xplore Journal.



Dr. K. K. Arun, Assistant Professor – III, published a paper entitled "Bees Swarm Optimization based Prediction of Machined Fatigue Failure" in the IEEE Xplore Journal.

Departmental Activities



Dr. S. Thirumurugaveerakumar, Associate Professor, published a paper entitled "Enhancing Supply Chain Resilience: Lead Time Reduction In Industrial Production, in the International Journal of Advance Research and Innovative Ideas in Education.

Dr. M. A. Vinayaga Moorthi, Assistant Professor – III, published a paper entitled "Design and Development of a Semi-Automated System for Food Waste Disposal and Management", in the International Journal of Advance Research, Ideas and Innovations in Technology



Dr. S. Rajesh, Assistant Professor – III, published a paper entitled "Design and Analysis of Brake Disc Reinforcement with AA6061 Metal Matrix Composites: A Green Approach" in the Journal of Recent Trends in Mechanics

MANUSCRIPTS REVIEWED

Dr. K. K. Arun, Assistant Professor – III, reviewed a manuscript titled "Cavity Sensing for Defect Prevention in Injection Molding" for the Special Issue of Journal of Engineering Research and Sciences.



Dr. K. M. Senthilkumar, Associate Professor, reviewed a manuscript titled "Multi response optimization of process parameters in turning of EN25 steel using topsis approach" for the Journal of Ceramic Processing Research.

BOOK CHAPTER PUBLICATIONS

Dr. V. Manivel Muralidaran, Assistant Professor – III, published a book chapter entitled "Machine Learning for Medical Applications" for the book 'Advanced Mechanical Engineering' published by De Gruyter, 263-310, 978-3-11-914782-8.



CONSULTANCY



Dr. N. Sangeetha, Senior Associate Professor and **Mr. P. D. Devan**, Assistant Professor – III provided consultancy on Model Analysis, for a research scholar from PSG College of Technology worth Rs. 2242/-.



PATENTS



Dr. S. Sivakumar, Assistant Professor – III, filed a couple of patents viz., All Wheels Steering mechanism by using stepper motor, 1.23ME2025428_56 on 29-03-2025 and Adaptive lower limb exoskeleton for human rehabilitation, 1.23ME2025428_57 on 30-03-2025.

PROGRAMMES PARTICIPATED

Dr. K. K. Arun, Assistant Professor - III, participated in an FDP on “AI- Driven robotics and industrial automation for industry 4.0 transformation” from 14-04-2025 to 18-04-2025, organized by O.P. Jindal University, Raigarh, C.G. India.



Dr. A. P. Arun, Assistant Professor - III, participated in an FDP on AICTE IDEA LAB from 21-04-2025 to 25-04-2025, organized by Hindusthan College of Engineering and Technology, Coimbatore.

Mr. K. Manikanda Prasath, Assistant Professor - II, participated in a FDP on AI- Driven robotics and industrial automation for industry 4.0 transformation from 14-04-2025 to 18-04-2025, organized by O.P. Jindal University, Raigarh, C.G. India.



Mr. V. R. Navaneeth, Assistant Professor - II, participated in an FDP on Innovation and Entrepreneurship from 25-03-2025 to 29-03-2025, organized by All India Council for Technical Education.



Dr. V. Manivel Muralidaran, Assistant Professor - III, participated in a FDP on Innovation by Design from 20-01-2025 to 15-02-2025, organized by NPTEL

FACULTY UPSKILLING

Dr. V. R. Muruganantham, Associate Professor, completed an online Course on "Introduction to OSHA: Safety Standards and Compliance" organized by Coursera.



Dr. N. Sangeetha, Senior Associate Professor, completed an online Course on "Modeling and Simulation with Simulink" organized by Coursera.

Dr. S. Sivakumar, Assistant Professor - III, completed the following online courses organized by Coursera

1. AI for Mechanical Engineers
2. Anatomy of the Upper and Lower Extremities
3. Content Creation With Generative AI
4. Industrial Fluid systems & Smart Factory Automation
5. Robotics Engineering & Applications
6. Fundamentals of Robotics & Industrial Automation
7. AI for Autonomous Vehicles and Robotics
8. How to Get Into Robotics



Dr. S. Thirumurugaveerakumar, Associate Professor, completed an online Course on "Innovation by Design", organized by NPTEL

Mr. K. Manikanda Prasath, Assistant Professor - II, completed an online Course on "Behavioral Finance", organized by Coursera



Mr. P. D. Devan, Assistant Professor - II, completed the following online courses organized through Coursera

1. Material Processing
2. Material Extrusion

Departmental Activities



Dr. S. Rajesh, Assistant Professor - II, completed the following online courses organized through Coursera

1. Industrial Fluid systems & Smart Factory Automation
2. Generative AI: Introduction and Applications
3. AI for Energy and Biomedical Applications

Dr. B. N. Sreeharan, Assistant Professor - III, completed a couple of online courses on "Power Query, Power Pivot & DAX and MySQL Data Analysis" organized by Maven Analytics



MoU Renewal



Renewal of MoU with **VLAND's BEST Hub Private Limited** was done on 25-03-2025. **Dr. S. Thirumurugaveerakumar**, Associate Professor, coordinated the event.

INDUSTRY LINKAGES

Find below the details of Joint framework SolidWorks Training organised with Capgemini Engineering, Coimbatore



Training Duration : 03-03-2025 to 04-04-2025
Trainer : Mr. Mohamed Ithries M,
Senior Professional I, Capgemini Engineering

Industry Participants:

1	Mr. Ramanarayanan S
2	Mr. Imthiyas Alam P K
3	Mr. Mohamed Riswan
4	Mr. Ashok Vellingiri
5	Mr. A S Ajay
6	Mr. Neelesh
7	Mr. Kumar K Sangesh
8	Mr. Murugesan Sivanantham
9	Mr. Saravanan Indu Prasanth
10	Mr. Karthik C
11	Mr. Subramani Madesh

STUDENT ACTIVITIES



- **Mr. R. J. Aldrin and Mr. I. Gnana Guru**, third year students participated in the following events in the National Level Technical Symposium, organized by the Department of Civil Engineering, Coimbatore Institute of Technology, Coimbatore during 11-04-2025 and 12-04-2025.

1. Paper Verse
2. Logic Faceoff

And **Mr. Aldrin**, participated in one more event “CAD Xtreme” in the same symposium.

- Details of the students and their online course completion details from Infosys Springboard are given below. They are motivated by **Dr M. A. Vinayagamoorthis**, Assistant Professor – III.

Student Name	Course Name
Mr. Kavin RV	Design Thinking the Fundamentals
Mr. Niranjan K	Mastering Digital Twins
Mr. Praveen K	What is Product Lifecycle Management?
Mr. Pravinraj M	Product Management: Designing and Running Experiments
Ms. Shreejaa R	SolidWorks - Beginners
Mr. Sriram A	Computational Fluid Mechanics - Airflow Around a Spoiler
Mr. Sukand S	Python Programming – 01, C Programming Course
Mr. Vishal Kannappan S P	AI Bootcamp – for Marketing
Ms. Yuvashree K	Multi-Part Design - I

Departmental Activities

Student Name	Course Name
Mr. Chelikani Bose hrudin	Career planning & Interview Preparation, Basics of Electronics & Programming
Mr. Dharineesh A	Artificial Intelligence for All
Mr. Gowtham M	3D Modeling -Tools and Features
Mr. Hemanth N K	Career planning & Interview Preparation
Mr. Vamanan S S	Career planning & Interview Preparation

- **Mr. D. Jai Harish** and **Mr. K. Tamilarasu** of third year, published their paper titled "Design and Development of a Semi-Automated System for Food Waste Disposal and Management." in the International Journal of Advance Research, Ideas and Innovation in Technology under the guidance of **Dr M. A. Vinayagamoorthi**, Assistant Professor – III.



- Graduation Day for the batch 2020-2024 was conducted on 26-04-2025. 169 students of our department were awarded during the function.
- Our students won the Alumni Trophy on 27-04-2024 held at KPR Institute of Engineering and Technology.

Departmental Activities

- During Achievers award ceremony, following students were awarded (institution) as detailed.

Mr. Sanjay R	-	Institutional Contributor Award
Mr. Hashwic V Vincent	-	Sports Star Men
Mr. Gokulakrishnan M	-	Institutional Contributor Award
Mr. Krishnan K.	-	Technical Star of the Batch (Research)
Mr. Saigugan C V	-	Technical Star of the Batch (Design)
Mr. Naveen G G	-	Institutional Contributor Award

- Also, the following students were recognized (department) as detailed below during farewell.



Mr. Nitin B, Best Volunteer



Mr. Kamalesh Ganesan, All rounder



Mr. Deepak R, Best Outgoing Student



Mr. Naveen GG, All Rounder



Mr. Sai Gugan C V, Best Outgoing Student

Departmental Activities



Our department students **Mr. Gnana Guru I, Mr. Vikash K, Mr. Thayanidhi S, Mr. Sriram A, and Mr. Vijaipranesh S S** as Team Kronos KCT, participated in TIFAN, conducted by SAEINDIA, held from April 25th to 27th at Mahatma Phule Krishi Vidyapeeth College, Rahuri. As part of the competition, they developed a transplanter capable of automatically planting seedlings. They successfully showcased their project and received participation certificates.

Departmental Activities

SNAP SHOTS



Dr. N. Sangeetha at PMC Tech, Hosur



Dr. S. Sivakumar at Rajalakshmi Engineering College

Departmental Activities



Dr. K. K. Arun and Mr. P. Pradeep at KGiSL



CAD Training



Dr. Karuppusamy while presenting his paper



Dr. Vinayagamoorthi during his paper presentation



Dr. Sivakumar during FDP

Departmental Activities



Participants of SolidWorks Training



Dr. Vinayagamoorthis, Dr. Manivel Muralidharan & Dr. Sreeharan after completing the Graduation Day Work

Departmental Activities



Achievers of our department, April 2025
(Left to Right: Sanjay R, Hashwic V Vincent, Gokulakrishnan M, Krisnan K, Saigugan C V, Naveen GG)



Alumni Trophy Winners @KPRIET



KUMARAGURU
college of technology

COIMBATORE – 641 049

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 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.

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 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 the 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 team work:** 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.