Volume No. 09
Issue No. 12

SEPTEMBER 2026

MExpress

Mechanical Engineering Department's Official Newsletter



KUMARAGURU COLLEGE OF TECHNOLOGY

Department of Mechanical Engineering

Mechanical Engineering Association

REACH US AT

da.mec@kct.ac.in mea_kct MEAKCT meakct

EDITORS



Dr. P. S. Samuel Ratna Kumar
Assistant Professor - III & Head



Dr. B. N. Sreeharan
Assistant Professor – III

ASSOCIATE EDITORS



Mr. T. K. Sri Yashwanth



Mr. N. S. Barath



Ms. K. Gayathri Sreha



Ms. B. C. Sivaani

CONTENTS

Details	Page
Editors' Portfolio	4
Student Internship Assessment	5
Parent–Teacher Meeting 2026–27	6
Guest Lecture	6
Paper Publications	7
Faculty as Resource Person	8
Patent	8
Faculty Development Programmes	8
Faculty Participation	9
QCFI Life Membership	10
Student Achievements	10
Industry Visit	12
Snapshots	14
Vision, Mission, POs, PSOs and PEOs	15

EDITORS PORTFOLIO

Dear Readers,

It gives us immense pleasure to present this edition of our Department Newsletter, highlighting the key academic, professional, research, and student-centric activities of the department.

This issue features important initiatives such as the Student Internship Assessment, Parent–Teacher Meeting 2026–27, Guest Lectures, Faculty Development Programmes, and Faculty Participation in various professional activities. It also showcases the scholarly and innovative contributions of our faculty through Paper Publications, Faculty as Resource Person engagements, and Patents.

The newsletter further highlights QCFI Life Membership achievements, Student Achievements, and Industry Visits, reflecting our commitment to quality education, professional excellence, and industry interaction. Memorable moments from these activities are captured in the Snapshots section.

We sincerely appreciate the contributions of our faculty, students, and stakeholders, and hope this newsletter provides valuable insights into the department's achievements and progress.

Warm regards.
Editors





DEPARTMENT ACTIVITIES

Student Internship Assessment

The Department conducted the 24MEJ301 – Internship II Presentation and Evaluation for III-Year students of the 2024–28 batch on 10 August 2026. Coordinated by **Dr. M. A. Vinayaga Moorthi**, Assistant Professor III, the session provided students with an opportunity to present their industrial experiences, technical learning, projects, and professional competencies gained during their internships.

Students shared their experiences from reputed organisations such as CIE Automotive India, Flowserve India Controls, Integral Coach Factory, Titan Company, Hofmann India Industrial, Janatics, Federal-Mogul Goetze, Hyundai Motor India, and Propel Industries, covering areas including manufacturing, design, quality control, CNC machining, testing, automotive production, CAD, metrology, safety, and production planning.



The presentations were evaluated by a faculty panel comprising **Dr. T. Karuppusamy,** Assistant Professor - III and **Dr. M. A. Vinayaga Moorthi**, Assistant Professor – III, along with verification of internship certificates, reports, photographs, and supporting documents.



A total of 130 student entries were documented, reflecting diverse industrial exposure and learning experiences. The activity strengthened students' ability to connect academic knowledge with real-world engineering practices, communicate their learning effectively, and develop industry-ready technical and professional skills.

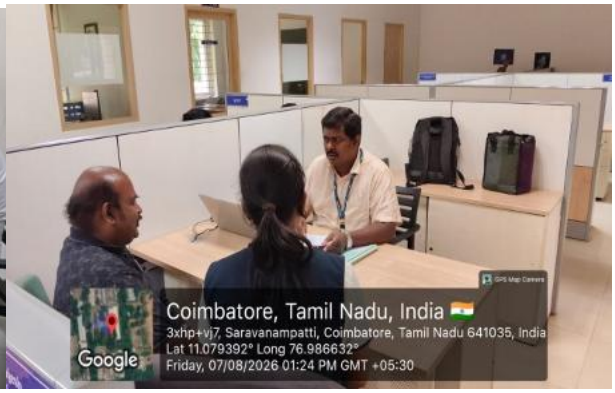




Parent–Teacher Meeting 2026–27

A **Parent–Teacher Meeting (PTM)** was successfully organized on 07 August 2026 as part of the academic activities for 2026–27, with parents participating along with students, mentors, class advisors, and faculty members. The meeting provided a platform to review students' academic performance, attendance, arrear status, examination results, and overall progress. Mentors and Class Advisors offered guidance and counselling to students facing academic challenges, while parents shared their observations and feedback. The interaction strengthened parent–mentor coordination and supported continued monitoring of students' academic progress and overall development through the Mentor–Mentee system.





Guest Lecture







An industry-oriented guest lecture on “Project Management” was organized for III-year Mechanical Engineering students on 18 August 2026. The session was delivered by **Mr. Tharaneeswarrao V**, PMP, PMI-SP, PMI-DASM, PMI-CP, from **Infocareer Pvt. Ltd.**, Chennai, and covered project planning, execution, resource management, risk management, and project delivery. The session provided students with valuable industry insights and enhanced their professional awareness and readiness for engineering careers. The event was coordinated by **Dr. C. Velmurugan**, Professor, and **Mr. P. D. Devan**, Assistant Professor II.

FACULTY CONTRIBUTIONS

Paper Publications



Mr. S. Prabhu, Assistant Professor II, co-authored the research article “Edge-computing-assisted intelligent control of industrial manufacturing processes”, published in collaboration with researchers from leading institutions in India and Uzbekistan in the journal of Materials Research Forum LLC. The study explores the integration of Edge Computing, Artificial Intelligence (AI), and Industrial Internet of Things (IIoT) for real-time monitoring, predictive maintenance, fault detection, and intelligent control in manufacturing. It also highlights digital twins, federated learning, and 5G/6G technologies for advancing smart manufacturing and Industry 4.0 applications.





Dr. M. Balaji, Associate Professor, and **Dr. V. Manivel Muralidaran**, Assistant Professor III published research work titled “Design of Semi-Automatic Bottle Filling and Capping Machine for Better Productivity” in Industrial Engineering Journal. The study developed a cost-effective PLC-based automated system for small-scale industries, achieving a productivity that demonstrated the application of automation and PLC-based control to improve productivity, efficiency, and consistency in manufacturing.

Faculty as Resource Person



Dr. M. Thirumalaimuthukumaran, Assistant Professor III, served as the Resource Person for a one-day Finite Element Method (FEM) Training Programme organized by Sakthi Excellence Academy (SEA) for 15 engineers of Shanthi Gears Limited on 06 August 2026 at Coimbatore. The programme focused on FEM principles and engineering applications, promoting technical knowledge sharing, industry–academia interaction, and professional development.

Patent



Mr. R. S. Mohan Kumar, Assistant Professor II, is among the applicants and inventors of the patent application titled “An Integrated Industrial Automation and Performance Optimization System”, filed on 13 June 2026 and published on 07 August 2026 under Application No. 202621073699 A. The invention integrates industrial automation, real-time performance monitoring, predictive optimization, digital twins, energy management, maintenance planning, and supervisory control to enhance industrial efficiency and operations. The 25-page application with 10 claims contributes to advancements in smart manufacturing, Industry 4.0, and intelligent industrial automation.

Faculty Development Programmes



Dr. M. Thirumalaimuthukumaran, Assistant Professor III, successfully completed a 40-hour online Faculty Development Programme (FDP) on “Metal Cutting and its Importance”, organized by the Electronics and ICT Academy (Phase-II), PDPM IIITDM Jabalpur, from 20 to 25 July 2026. The programme provided valuable insights into metal cutting principles and their significance in manufacturing processes, strengthening his expertise in advanced manufacturing practices and contributing to his professional development.



Dr. Arun K. K., Assistant Professor III, participated in a five-day Skill/Faculty Development Workshop on “Applied CFD for Energy, Thermal, and Sustainable Systems Using ANSYS Fluent”, organized by NIT Rourkela in association with ARK Infosolutions Pvt. Ltd., from 03 to 07 August 2026. The workshop provided valuable exposure to Computational Fluid Dynamics (CFD) and its applications in energy, thermal, and sustainable engineering systems, strengthening his professional knowledge and expertise in advanced engineering analysis.



Mr. P. Pradeep, Assistant Professor II, participated in a five-day Skill/Faculty Development Workshop on “Applied CFD for Energy, Thermal, and Sustainable Systems Using ANSYS Fluent”, organized by NIT Rourkela in association with ARK Infosolutions Pvt. Ltd., from 03 to 07 August 2026. The workshop provided hands-on exposure to Computational Fluid Dynamics (CFD) and its applications in energy, thermal, and sustainable engineering systems, strengthening his technical expertise in advanced engineering analysis.

Faculty Participation



Dr. B. N. Sreeharan, Assistant Professor III, successfully completed the Microsoft-authorized “Microsoft PL-300 Exam Preparation and Practice” course through Coursera on 04 August 2026, enhancing his knowledge of Power BI, data analysis, visualization, and business intelligence.



Dr. V. R. Muruganantham, Associate Professor, participated in a three-day Training the Trainers Workshop on “5S Workplace Management”, organized by the Quality Circle Forum of India (QCFI), Coimbatore Chapter, at Kumaraguru College of Technology from 17 to 19 August 2026. The workshop focused on 5S principles, workplace organization, cleanliness, efficiency, and continuous improvement, providing insights into effective 5S implementation and training methodologies.

Mr. B. Jeeva, Assistant Professor II, and **Mr. S. Sivakumar**, Assistant Professor II, participated in CoOL Conclave 3.0, organized by ISHRAE from 20 to 22 August 2026 at Merlis Hotel, Coimbatore. The conclave, themed "Decarbonisation of the Built Environment," covered sustainable cooling, energy efficiency, net-zero buildings, green refrigerants, HVAC&R technologies, and building performance through technical sessions, panel discussions, and technology exhibitions. The participation provided exposure to emerging sustainable practices in the HVAC&R sector.



QCFI Life Membership



Dr. V. R. Muruganantham, Associate Professor, has been awarded Life Membership of the Quality Circle Forum of India (QCFI) on 18 July 2026. The membership certificate was issued by the QCFI Membership Wing, with Membership No. 049931 126699. This professional association provides an opportunity to engage with QCFI's quality-improvement initiatives and activities and further strengthen the culture of continuous improvement and quality excellence.

STUDENT CONTRIBUTIONS

Student Achievements

Sidhun George A R and **Sujan S** actively participated in the KCT Ideathon 2026, held at the Kumaraguru Campus on 5 and 6 August 2026. The event provided a platform for students to develop creative, innovative, and practical solutions to real-world challenges through collaboration and problem-solving. Their participation reflected their interest in innovation and practical problem-solving. The Ideathon was supported by REACT, NEED Mission, and the AICTE IDEA Lab.



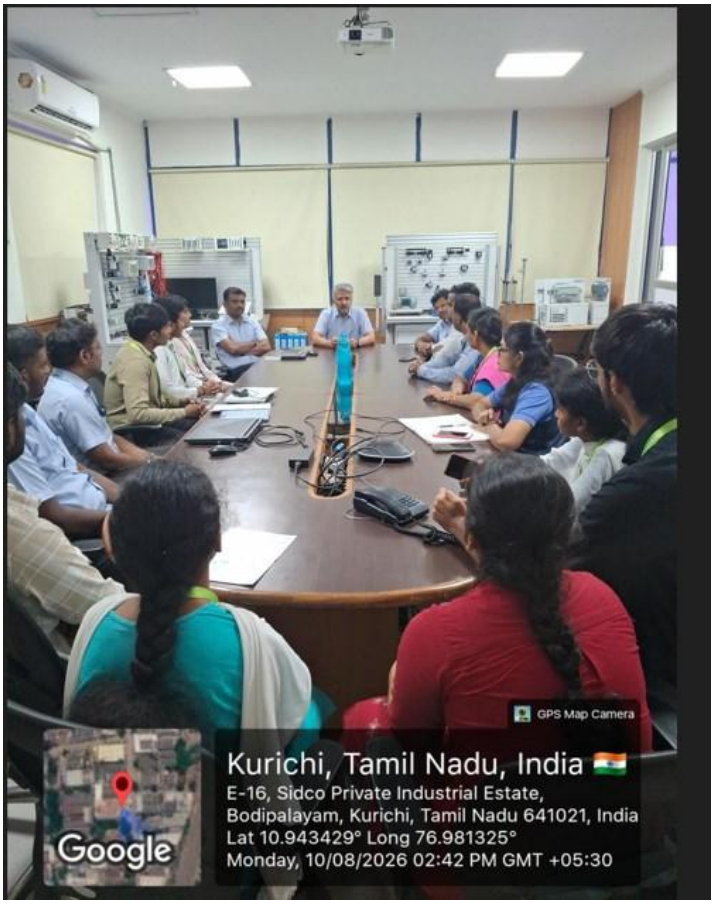
Mr. Sri Yashwanth T K and **Mr. Barath N S**, Final Year students of the Department of Mechanical Engineering, Kumaraguru College of Technology, successfully completed the project **"Design, Optimisation and Automation of Flag Hoisting System" at the KCT Campus – THE ORB**. The project aimed to reduce the flag hoisting time from 7.5 minutes to nearly 3 minutes and automate the rope winding system through **sprocket system modification and optimisation** and **Variable Frequency Drive (VFD) integration.**

The implemented modifications successfully reduced the hoisting time to nearly **3 minutes**, significantly improving the efficiency of the existing system. The project provided the students with practical exposure to mechanical optimisation, power transmission, drive integration, and automation. In recognition of their successful implementation and contribution, the students received a **Special Recognition Award** during the Independence Day celebration held on 15 August 2026.

The students sincerely thank **Dr. Samuel Ratna Kumar P S,** Head of the Department, for his encouragement and support, and **Dr. Sangeetha N**, Senior Associate Professor, and **Dr. Velmurugan C**, Professor, for their valuable guidance throughout the project. Special thanks are extended to the Physical Education Department for their cooperation and support in the successful implementation of the project at THE ORB.

Industrial Visits - Janatics India Private Limited

An industrial visit to Janatics India Private Limited, Kurichi, Coimbatore, was organized on 10 August 2026 as part of internship, consultancy, and capstone project activities. **Sriram A, Deenadhayalan B** and **Niranjan K** participated in the visit under the mentorship of **Dr. K. Krishnamoorthi, Assistant Professor III**. The students interacted with industry professionals and discussed the real-time manufacturing challenge "Challenge in Manufacturing Internal & External Long Spline Shafts for Linear-to-Rotary Mechanism." The interaction provided valuable insights into dimensional accuracy, machining feasibility, tooling requirements, process limitations, and quality considerations involved in spline shaft manufacturing. The visit strengthened industry–academia interaction and helped students apply theoretical knowledge to practical engineering challenges while supporting the further development of their consultancy and capstone project.



Coptech Wire & Cable Pvt. Ltd.

An industrial visit to Coptech Wire & Cable Pvt. Ltd., Coimbatore, was organized on 27 August 2026 from 2:00 PM to 4:00 PM to provide students with practical exposure to copper wire manufacturing and the wire drawing process. **Kavin R V (23BME045)** and **Praveen K (23BME073)** participated in the visit under the guidance of **Dr. V. Manivelmuralidaran,** Assistant Professor III and **Dr. K. Krishnamoorthi,** Assistant Professors III. The students observed the complete manufacturing sequence, including the progressive reduction of 8 mm Continuous Cast Copper Rod (CCR) through drawing dies and the operation of equipment such as the Rod Breakdown Machine, capstan, dancer mechanism, and drop coiler. They also gained insights into PCD dies, coolant systems, controlled reduction ratios, intermetal wire drawing, and annealing processes used to restore ductility after cold working. The visit provided valuable practical knowledge of wire drawing, cold working, annealing, process control, and copper wire manufacturing, helping students relate their academic learning to real-world industrial applications.



SNAP SHOTS



Guest Lecture on “Project Management”



FEM Training Programme for Shanthi Gears Engineers



Mr. B. Jeeva, Assistant Professor II, and Mr. S. Sivakumar, Assistant Professor II, participating in CoOL Conclave 3.0.

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.