MEXPRESS

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Mechanical Engineering Association
DEPARTMENT OF MECHANICAL ENGINEERING

KUMARAGURU college of technology
character is life

EDITORS

ASSOCIATE EDITORS

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From the Editors…

Dear Readers,

Welcome to our latest edition of the newsletter, where we bring you the highlights of the activities and achievements of our department. It has been an eventful period, filled with various programs, collaborations, and academic endeavors.

One of the key aspects of our department is the organization of impactful programs. Over the past few months, we have successfully hosted several enlightening and thought-provoking events. These programs have not only provided valuable insights to our students but have also created platforms for networking and exchange of ideas. We are proud to have our esteemed faculty members serving as resource persons, sharing their expertise and knowledge with our students and participants from the wider academic community.

Our faculty members continue to contribute significantly to their respective fields of study. We are pleased to share that our faculty have published a commendable number of research papers in esteemed journals and conferences. These publications reflect their commitment to advancing knowledge and fostering innovation. Additionally, our faculty members have been actively involved in reviewing manuscripts, contributing to the academic rigor and quality of various publications.

Furthermore, our department has been actively engaged in consultancy services, offering expert guidance and support to external organizations. This collaboration not only enables us to apply our academic expertise in real-world scenarios but also helps in establishing valuable connections and partnerships beyond the boundaries of our institution.

In order to stay updated with the latest developments and advancements in their respective fields, our faculty members have actively participated in various programs. By attending these events, they enhance their knowledge and bring back valuable insights that enrich our academic environment. We are proud of their dedication to continuous learning and professional growth.

To provide you with a glimpse of our vibrant activities, we have included snapshots of various events and programs in this newsletter. These images capture the essence of our department's dynamism, showcasing the enthusiasm and involvement of our students and faculty members.

Finally, we cannot overlook the achievements and contributions of our students. By presenting papers, our students have consistently demonstrated their presentation skills, creativity, and commitment to making a positive impact.

We hope you enjoy reading this newsletter, which serves as a testament to the dedication and hard work of our faculty, staff, and students. We remain committed to fostering an environment of academic excellence, innovation, and holistic development.

Thank you for your continued support and interest in our department. We look forward to your valuable feedback and suggestions.

We hope you will enjoy this edition of newsletter too.

Best regards,

Editors….

PROGRAMMES ORGANIZED

The Department of Mechanical Engineering along with COEL, KCT organized a 12-day (from 15-06-2023 to 03-07-2023) SolidWorks training programme for the Dr. Mahalingam College of Engineering and Technology, students placed in Capgemini Engineering under New Product Development.

Dr. M. A. Vinayagamoorthi, Assistant Professor – II, Mr R. S. Mohankumar, Assistant Professor – II, Mr. S.L. Vaseekaran and Mr. R. Praveen Kumar, Final Year Mechanical Engineering Students, Solid Works Certified Professionals and COEL Trainers were the resource persons.

The training programme was coordinated by **Dr. M. A. Vinayagamoorthi,** Assistant Professor – II and **Mr. R. S. Mohankumar,** Assistant Professor – II and **Mr. Vijaykannan,** Assistant Professor, Department of Mechanical Engineering, Dr. Mahalingam College of Engineering and Technology.

FACULTY AS RESOURCE PERSONS

Dr. P.S. Samuel Ratna Kumar, Assistant Professor, along with **Dr. R. Manivel,** Professor, were the resource persons for the Training on "Writing Research Proposals" organized by KLDA, KCT on 26-06-2023.

Dr. P. R. Ayyappan, Senior Assistant Professor, was the external examiner for the Advanced combustion laboratory- Mechanical Engineering Department – Government College of Technology Coimbatore on 22-6-2023.

Dr. B. Senthilkumar, Associate Professor, was the resource person for the training on "Curriculum Development" organized by KLDA, KCT on 26-06-2023.

PAPER PUBLICATIONS

Dr. S. Thirumurugaveerakumar, Associate Professor, published a paper entitled "A critical analysis of the blockchain in manufacturing system implementation", in IEEE 10.1109/ICACCS57279.2023.10112828.

Dr. M. A. Vinayagamoorthi, Assistant Professor – II, published following papers in the International Journal of Novel Research and Development. "Study on Wear Intensity in Gun Barrel", International Journal of Novel Research and Development", Volume 8 Issue 6, page no.c680-c688 June 2023. "Study of Glass Fiber Reinforced Plastic in Aluminium Square Tube for Bus Frame", International Journal of Novel Research and Development, Volume 8 Issue 6, page no.d858-d864 June 2023

MANUSCRIPTS REVIEWED

Dr. P. S. Samuel Ratna Kumar, Assistant Professor, reviewed a paper titled "Prediction of Tribological Performance of Cu-Gr-TiC Composites Based on RSM Method and Correlative with Surface Topography" for the Physica Scripta Journal. He also reviewed another paper titled "Mechanical properties and fracture behaviour of Al(111)/MgAlB4(0001) interface in Al matrix composites: A first-principle calculation study" for the Materials Research Express Journal.

CONSULTANCY PROVIDED

Dr. R. Manivel, Professor, and **Dr. M. Thirumalaimuthukumaran,** Assistant Professor - III, completed a consultancy project titled "Structural Analysis of Truck-mounted Crane" for M/s. Bull Agro Implements, Coimbatore, amount of Rs. 7000/-.

Dr. B. Senthilkumar, Associate Professor, completed a consultancy project titled Surface roughness measurement in the CAM laboratory for Mr Hari Balaji, Coimbatore, amount Rs. 1000/-.

PROGRAMMES ATTENDED

Dr. B. N. Sreeharan, Assistant Professor – II, participated in a National level Webinar on “Exploring "Google Bard AI" for Teachers” on 20-06-2023 organized by Scrollwell.

Dr. M. A. Vinayagamoorthi, Assistant Professor II, attended a 5 days direct FDP on Autodesk Product Design Engineering using Fusion 360, organized by K.S.R. College of Engineering, Tiruchengode, in association with ICT Academy, from 26th June 2023 to 1st July 2023.

Dr S. Sivakumar, Assistant Professor III, attended an online FDP on New IPR - 2023 Workshop on Innovation and Intellectual Property Rights, organized by Innovative Technology Enabling Centre (InTEC), CSIR-IMMT, Bhubaneswar, from 12th June 2023 to 17th June 2023. He also attended an online FDP on 3D printing Confirmation, organized by Sri Ramakrishna Engineering College, Coimbatore, from 26th June 2023 to 30th June 2023. Further, he attended an online workshop titled 2nd Edition of Workshop on Aircraft Health Management dated 22 & 23 June 2023, organized by SAE-INDIA.

Dr P. S. Samuel Ratna Kumar, Assistant Professor, attended an International Webinar on Revitalization: Collective Action for the Ocean, on 8th June 2023 organized by Underwater Acoustic Research Laboratory, SSN College of Engineering, Chennai.

SNAPSHOTS

SolidWorks Training

Dr. M. A. Vinayagamoorthi @KSR College of Engineering for Training

Dr. P. S. Samuel Ratna Kumar delivering talk @ KLDA Programme @ KCT

PAPER PUBLICATIONS

Srinith kumar P, Santhosh murthy K, Ashwin K, Vinayagamoorthi M A, published their paper entitled "Study on Wear Intensity in Gun Barrel" in the International Journal of Novel Research and Development, Volume 8 Issue 6 June 2023.

Sri Devanand R K, Tharan kumar M, Siva Subramanian, Vinayagamoorthi M A, published their paper entitled "Study of Glass Fiber Reinforced Plastic in Aluminium Square Tube for Bus Frame" in the International Journal of Novel Research and Development, Volume 8 Issue 6 June 2023.

Vikash V, Pradeepan S, Sukesh R, published their paper entitled "Study of En-24 Grade Material in Automobile Brake Discs" in the International Journal of Novel Research and Development, Volume 8 Issue 6 June 2023.

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 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 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 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):

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.

PO3 : 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.

PO4 : Apply knowledge and competencies in manufacturing, analytics, supply chain, quality and engineering management.

PO5 : Apply principles of industrial engineering to solve problems in industry.

PO6 : An ability to work as part of interdisciplinary teams, communicate effectively, model and design engineering systems optimally.