

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,

In this edition of Editors' Portfolio, we are delighted to present a comprehensive overview of the diverse range of activities and achievements that have taken place within our department over the past month. These activities reflect our commitment to academic excellence, innovation, and community engagement.

Programmes Organized: We have organized a multitude of programs, workshops, and seminars aimed at enriching the educational experience of our students and fostering a spirit of inquiry and exploration. **Value Added Programmes:** Our department continues to enhance the value of education by offering specialized programs that provide students with practical skills and knowledge beyond the curriculum. **Faculty as Resource Persons:** Our esteemed faculty members have played a pivotal role as resource persons, sharing their expertise, and enriching the academic discourse within our institution and beyond. **Manuscripts Reviewed:** We take pride in the scholarly contributions of our faculty who have diligently reviewed and published manuscripts in renowned academic journals. **Patents:** Our commitment to innovation and research is evident in the patents filed by our faculty and students, showcasing our dedication to pushing the boundaries of knowledge. **Programmes Participated:** Our department actively participates in various national and international programs, fostering collaboration and knowledge sharing. **Faculty Industrial Visit:** Faculty members engaging in industrial visits to stay abreast of industry trends, ensuring our curriculum remains industry-relevant. **Snap Shots:** A glimpse into the vibrant life, capturing moments of academic exploration, extracurricular activities, and events. **Programmes Participated (Students):** Our students have excelled in various programs, competitions, and events, making us proud with their achievements. **Forthcoming Programmes:** We are excited about the upcoming programs that promise to further enhance the academic and extracurricular landscape of our students.

As we reflect on our past achievements and look forward to the future, we extend our gratitude to our dedicated faculty, enthusiastic students, and the supportive community that makes these accomplishments possible. We remain committed to our pursuit of excellence and the continuous development of our institution.

Best regards,

Editors....



PROGRAMMES ORGANIZED



Technology
InnovAtion Hub
of IIT Delhi



Department of
Science & Technology
GOVERNMENT OF INDIA



Empowering the Youth of India for a Better India

Nurture Program

Bringing smile to million faces





Kumaraguru College of Technology,
Coimbatore, Tamil Nadu - 641049

Count:63    

A Skill Development and Entrepreneurship Programme in the Field of "DRONE TECHNOLOGY" was organized in the department from 04-09-2023 to 09-09-2023. **Dr. T. Karuppusamy**, Assistant Professor – II, coordinated the programme.





A two-day training programme on Jyoti CNC DX 200 -3 machine and its trouble shooting was organized by the department on 21-09-2023 and 22-09-2023. **Mr. R. Navaneethakrishnan**, Assistant Manager, Jyoti CNC, Coimbatore Division was the resource person. The training programme was coordinated by **Dr. B. Senthilkumar**, Associate Professor, **Dr. S. Thirumurugaveerakumar**, Associate Professor and **Dr. N. Sangeetha**, Senior Associate Professor.



A guest lecture on "Government Funded Project Proposal Discussions and Review" was organized by the department on 08-09-2023. **Dr. S. Senthilvelan**, Professor and Head of the Department, Department of Mechanical Engineering, IIT, Gawhati was the resource person. **Dr. V. Manivelmuralidaran**, Assistant Professor – III and **Dr. A. P. Arun**, Assistant Professor – III were the coordinators.



VALUE ADDED PROGRAMMES:



A value-added programme on “**Renewable Energy Sources**” is being conducted in the department by **Mr. S. Sivakumar**, Assistant Professor – II from 14-08-2023 to 03-11-2023.

Another value-added programme on “**Structural Integrity for Piping Applications**” organized in the department by **Mr. Subramanian Chidambaram**, Central Mechanical Engineering Research Institute CSIR: Durgapur, West Bengal from 10-08-2023 to 10-09-2023. **Dr. V. Manivelmuralidaran**, Assistant Professor – III coordinated the programme.



One more value-added programme on “**Computational Fluid Dynamics with OpenFOAM**” is being organized in the department by **Mr. Kumaresh Selvakumar**, South Korea from 21-08-2023 to 31-10-2023. **Dr. S. Ramanathan**, Assistant Professor – III and **Dr. P. S. Samuel Ratna Kumar**, Assistant Professor – I coordinated the programme.



FACULTY AS RESOURCE PERSONS:



Dr. P. S. Samuel Ratna Kumar, Assistant Professor – II was one of the resource persons in Defence & Techno Expo Edition 2.0 and Industrial Visits at Chennai Trade Centre from 03-09-2023 to 05-09-2023. He was also a resource person in technical discussion on Rubber Bladder development at DRDL, Hyderabad from 14-09-2023 to 15-09-2023. Also, he is a resource person in Interaction Meeting for Development of Aerolubes for IAF Requirements 5 BRD, Indian Airforce, Sulur on 20-09-2023.

Mr. P. D. Devan, Assistant Professor – II, was the External Examiner for the End semester Paper Valuation held at SNS College of Technology on 04-09-2023.



Mr. P. Pradeep, Assistant Professor – II, was the External Examiner for the End semester Paper Valuation at Dr. NGP Institute of Technology on 09-09-2023.

Dr. S. Rajesh, Assistant Professor – II, was the External Examiner for the End semester Paper Valuation at Dr. NGP Institute of Technology on 09-09-2023.





Mr. S. Prabhu, Assistant Professor – II, was the External Examiner for the End semester Paper Valuation at SNS College of Engineering on 30-08-2023 and 31-08-2023.

Dr. S. Bhaskar, Associate Professor, was the Resource Person and delivered lectures on Outcome based Education and CO PO Attainment at K. S. School of Engineering and Management on 22-09-2023. He also delivered another lecture on “Training Needs Identification” at Kumaraguru Institute of Agriculture on 11-09-2023. Further he delivered another lecture on “Assessing the requirements for professional growth and approach” at Vanavarayar Institute of Agriculture on 09-09-2023. Also, he was the resource person in First Year Induction Programme at Info Institute of Engineering on 15-09-2023.



Dr. S. Ramanathan, Assistant Professor – III was the External Examiner for the End semester Paper Valuation at Dr. NGP Institute of Technology, Coimbatore on 09-09-2023.

MANUSCRIPTS REVIEWED:

Dr. P. S. Samuel Ratna Kumar, Assistant Professor - I, reviewed a manuscript titled “Prediction of Process Parameters of Friction Stir Process of Aluminum Based on Metal Matrix Composites” for the International Journal of Mining and Metallurgy, Section B: Metallurgy, a Scopus indexed journal.



Mr. B. Jeeva, Assistant Professor – II, reviewed a manuscript entitled “Research on ORC-based industrial circulating water cogeneration system” for the International Journal of Applied Science and Technology, a WoS indexed journal. He also reviewed another manuscript titled “Investigation of the control characteristics of mineral processing technology indicators” for the International Journal Advances and Challenges in Science and Technology another WoS indexed journal. Furthermore, he reviewed another manuscript for the WoS indexed International Journal of Plant & Soil Science.



Dr. B. Senthilkumar, Associate Professor, **Mr. V. R. Navaneeth**, Assistant Professor – II, provided consultancy for M/s. Versa Drives, Coimbatore for Rs. 2478/- on developing Modular type & Regular type of Fan top and Bottom cover.





Dr. V. Manivelmuralidaran, Assistant Professor – II provided consultancy National Institute of Technology, Trichirappalli in conducting Pin on Disc Wear Test Analysis for 30 Samples for Rs. 12390/-.

PATENTS



Dr. M. A. Vinayagamoorthi, Assistant Professor – II, and **Dr. S. Thirumurugaveerakumar**, Associate Professor, published a patent on “An Automated Non-contact measurement system in lathe machine” bearing no. 202341043075 A dated 27-06-2023.



PROGRAMMES PARTICIPATED



Dr. K. K. Arun, Assistant Professor – III, and **Mr. V. R. Navaneeth**, Assistant Professor – II, participated in an FDP on “Modelling, Processing and Characterisation of Composites” from 13-09-2023 to 17-09-2023 at National Institute of Technology, Karnataka.



Mr. T. R. Sukumar, Associate Professor, participated in a Four Days Training the Trainers workshop on Workplace Management – 5S” from 11-09-2023 to 14-09-2023, organized by Quality Circle Forum of India Coimbatore Chapter at Pricol Limited, Coimbatore.



Mr. R. S. Mohankumar, Assistant Professor – II, participated in a Seminar on “Business Process Analysis: Role of Process Modelling, Simulation and Optimisation” on 27-09-2023, organized by NIVID Informatics Private Limited and IIT Roorkee.



Mr. B. Jeeva, Assistant Professor - II attended Startup Thiruvizha on 20-08-2023 organized by CODISSIA Trade fair centre, Coimbatore.



Mr. K. Manikanda Prasath, Assistant Professor – II, participated in a Seminar on “Business Process Analysis: Role of Process Modelling, Simulation and Optimisation” on 27-09-2023, organized by NIVID Informatics Private Limited and IIT Roorkee.

Department Activities

Dr. S. Sivakumar, Assistant Professor – III, and Dr. S. Ramanathan, Assistant Professor – III, participated in a Workshop on “COMSOL Multiphysics® for Academic Research” on 08-09-2023 organized by PSG College of Technology, PSG College of Technology, Coimbatore. He also participated in a Seminar on “Ansys Academic Innovation Conference” on 15-09-2023 organized by ANSYS Software PVT Ltd at Hotel Radisson Salem.



Dr. P. S. Samuel Ratna Kumar, Assistant Professor – I, participated in an Indo - Australian Webinar on Composite Materials for Ballistic Protection” on 20-09-2023 organized by PSG College of Technology, India and University of New South Wales, Canberra, Australia through Cisco WebEx platform.



Dr. N. Sangeetha, Senior Associate Professor, participated in a Workshop on “COMSOL Multiphysics® for Academic Research” on 08-09-2023 organized by PSG College of Technology, Coimbatore.



Dr. M. Thirumalai Muthukumaran, Assistant Professor – III. participated in a Seminar on Patent Drawing Course” on 25-09-2023 organized by Turnip Innovations. He also participated in another Seminar on Optimizing workplace performance: Integrating Electromyography, Ergonomics, and Industrial engineering for effective physical load evaluation on 08-09-2023, organized by Institution of Engineers (India), Coimbatore, Institution of Engineers (India), Coimbatore. Further, he also participated in Indo - Australian Webinar on Composite Materials for Ballistic Protection” on 20-09-2023 organized by PSG College of Technology, India and University of New South Wales, Canberra, Australia through Cisco WebEx platform. In addition to above he completed an online course on “Finite Element Analysis Convergence and Mesh Independence” on 30-09-2023 organized by Coursera Project Network, Coursera Project Network.

Dr. M. Balaji, Associate Professor, participated in a Seminar on “Business Process Analysis: Role of Process Modelling, Simulation and Optimisation” on 27-09-2023 organized by NIVID Informatics Private Limited and IIT Roorkee.



Dr. B. Senthilkumar, Associate Professor, participated in a Seminar on Spread the Spark 2023 – Celebrating Teachers” on 07-09-2023 organized by CII Coimbatore.

FACULTY INDUSTRIAL VISIT

Dr. P. S. Samuel Ratna Kumar, Assistant Professor – II, visited DRDL – Hyderabad Aerospace Engineering, Salem for the purpose of Defence project titled “Rubber Bladder” on 26-09-2023.



Department Activities



Dr. V. R. Muruganantham, Associate Professor, **Dr. M. A. Vinayagamoorthi**, Assistant Professor – II, **Mr. P. Pradeep**, Assistant Professor - II and **Mr. S. Prabhu**, Assistant Professor – II visited M/s. Wheels India, Chennai as a part of MoU activities during 22-09-2023 and 23-09-2023.



SNAPSHOTS



Faculty members during training on Jyothi CNC Machine



Training on Jyothi CNC Machine



Faculty members at M/s. Wheels India Limited, Chennai



Faculty members at M/s. Wheels India Limited, Chennai



Dr. Samuel @ Salem Aeropark

PROGRAMMES PARTICIPATED

Mr. T. Suresh, Research Scholar participated in a Seminar on “3D Metal Printing Technology” on 24-08-2023 at PSN College of Engineering and Technology, Tirunelveli. He also participated in a Seminar on "Navigating the pathways of publishing in High-quality journals by using Scopus and ScienceDirect on 01-09-2023 at KCT, Coimbatore. Further he participated in a Workshop on COMSOL Multiphysics® for Academic Research on 08-09-2023 PSG College of Technology, Coimbatore.

FORTHCOMING PROGRAMMES

National Level Technical Symposium

SRiSHTi 2023, PSG College of Technology, National Level Technical Symposium, Coimbatore, Tamil Nadu, 14th - 15th October 2023 through Offline Mode.

Springing in 2006, SRiSHTi ,hosted by the IEEE Students chapter 12951, is one of the biggest technical festivals in the country, that has generated participants from more than 100 colleges spanning the entirety of India. It is a technical symposium comprising several events, a variety of workshops, paper presentations and many more in a multitude of industries.

Workshops

1. Augmented Reality Virtual Reality
2. Generative AI
3. Drone Technology
4. EV Technology
5. Premiere Pro Mastery
6. Mobile Robotics
7. Battery Management

Event website: <https://srishti.psgtech.ac.in/home.php>

Contact Details

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Registration Fees

Registration fee for PSG tech and PSG itech students - 150
Registration fee for Non PSG tech students - 200

(Note - No general fee is required for the students who are attending Workshop alone)
Certificates will be provided to Participants

Xemplar 2k23, Velammal Institute of Technology, Tiruvallur, Tamil Nadu (TN), 14 Oct 2023.



The poster for Xemplar'23 is a vibrant purple and blue design. At the top left is the Velammal Institute of Technology logo, featuring a stylized 'V' with a gear and a lightbulb. To its right is the text 'VELAMMAL INSTITUTE OF TECHNOLOGY' and 'Velammal Knowledge Park, Chennai - Kolkata High Way, Panchetti, Thiruvallur District, Pincode - 601 204'. Further right are the NBA and NAAC accreditation logos. Below this, it says 'DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING' and 'PROUDLY PRESENTS A National Level Technical Symposium'. The central text 'XEMPLAR'23' is large and stylized. To the left of this, under 'TECH EVENTS', are: Paper Presentation, Circuit Debugging, Idea Challenge, Technical Quiz, Mini Project, and Electro marketing. To the right, under 'NON TECH EVENTS', are: Place it right, Dare to guess, E-Sports, Music fest, and Hot Seat. Below the central text, it says 'Send your Paper to xemplar2k23@gmail.com' with an email icon. A calendar icon shows '14 OCTOBER 2023'. Below that, 'Registration fee - 100/-' and 'Last Date to register: 12-10-2023'. To the right is a QR code labeled 'EXCITING PRIZES' and 'SCAN TO REGISTER'. At the bottom, it lists 'Faculty Co-ordinators' (Mr. P. Vivek 80154 24766, Mrs. G. Bhavani 91767 96299), 'Reach us on' (Facebook: Velammalitech Elec, Instagram: Xemplar_2K23), and 'Students Co-ordinators' (Vijay Ganesh.1 90870 56633, Selvaganeshan.M 90255 45043).

Registration Date-01 Oct 2023 - 12 Oct 2023, Spot Registration, Registration Procedure-
<https://forms.gle/nhbV4NePmKuppRXq7>

Technical Events:

PAPER PRESENTATION
TECHNICAL QUIZ
IDEA CHALLENGE
MINI PROJECT
MARKETING

Event Website

<https://forms.gle/Cbbo4B34BhMG87FS8>

Contact Details

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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):

- 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.